Using
tranScribe®
Engraving

The tranScribe Filter Editor
in Collage and RTI-E

OHIO
GRAVURE TECHNOLOGIES

Additional copies of this manual can be obtained. Contact your Ohio GT sales representative or Ohio GT Customer Support. Reference the following document number:

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About tranScribe Engraving

The tranScribe Engraving System is used to engrave fine text and serifs with a minimum of edge roughness. The resolution of tranScribe engraving is much higher than traditional electro-mechanical engraving, with resolutions 4 to 8 times that of traditional. This permits greater edge detail for smoother printing of both horizontal and vertical edges. TranScribe engraving produces linework results that are close to the quality achieved by chemical etch engraving or offset printing. Applications include security printing, cigarettes, Kanji text, and so on. Use tranScribe Engraving only on cylinders containing linework images with no CT data.

The tranScribe software is included with all versions of Collage. The tranScribe Engraving hardware is optional and must be installed on an engraver in order to do tranScribe engraving.

The tranScribe Engraving software works with jobs created in Collage or in RTI-E. (An older version of tranScribe is available for CCS but will not be addressed in this document.) This chapter applies primarily to Collage; the remaining chapters are for Collage *and* RTI-E.

Note: The term "Collage" is used to refer to Collage, Collage-S, Collage-E, and Collage-L.

Using tranScribe with Collage

The basic steps for using tranScribe Engraving are:

1. Use the tranScribe Filter Editor to create the desired tranScribe filter. Several default "factory" filters are provided with the software, and may be used as is or be modified for your requirements and saved with a new name.

2. In Collage, create the job. In the Gravure Parameters window, on the tranScribe page, from the drop-down menu, select a tranScribe filter for each cylinder to be tranScribed.

   If doing pre-process tranScribe:

   Close the job in the Collage editor. Open the tranScribe Image Processor. Select the job and click the tranScribe button. When the tranScribe is complete, close the window. Reopen the job in the Collage Editor to soft-proof.

   If doing real-time tranScribe:

   You may choose to create selective tranScribe areas (Collage/Collage-S only).

3. Soft-proof the job. On Soft Proof Parameters window, turn on Print Resolution and select the tranScribe checkbox.

4. Set the job Ready For Print.

Software

In Collage there are two software components to tranScribe:

- The tranScribe Filter Editor is used to create and save a filter, which is a set of values defining the cell shape and edge enhancement parameters. The software includes several factory filters you may use.

- The tranScribe Image Processor is used to pre-process images on a cylinder using the specified tranScribe filter. Refer to the Collage on-line help for information on using the tranScribe Image Processor.
  This is *not* used for real-time tranScribe.

On an RTI-E system, only the tranScribe Filter Editor is present. The processing occurs when a cylinder is engraved. Refer to the RTI-E documentation.

Backward Compatibility

Collage jobs that use tranScribe will not open in earlier versions of Collage software if the filter methods used in the job did not exist in the earlier version.

Pre-process and Real-Time

There are two ways to tranScribe images in a job: pre-process and real-time.

Pre-processing is the original method: the job must be tranScribed with the tranScribe Image Processor. You can then reopen the job and verify the results. If any changes are needed, the job must be re-tranScribed. When complete, reopen in Collage and set the job Ready For Print.

Real-time tranScribing, new in 3.1.7, means that image data is tranScribed immediately, when you soft-proof or at engrave time. You can make changes, in the tranScribe filter used, or screen values, or other values, and see the changes after soft-proofing. No need to use the tranScribe Image Processor.

Starting with version 3.1.7, RTI-E uses real-time tranScribe only, while Collage offers both.

About Images for tranScribe Engraving

Images to be tranScribed should not have any tints, tonework, grayscales, or CTs in it—only black and white linework should be used for tranScribe engraving.

If a cylinder is to be a combination of linework and CT data, two separations should be created in Collage, or two cylinders in RTI-E. The linework is engraved with tranScribe, and then the CT tonework can be over-engraved with normal AC engraving.

Over-engraving

Collage has special handling available for over-engraving, which can improve the appearance of the final cylinder. In the Gravure Parameters window, indicate which two separations will be engraved on the same cylinder. The software then makes tiny adjustments so that the two separations may be engraved with minimal or no misregistration.

Note: In the Collage Help index, look up "over-engrave" for more information on using this.

About resolution and screens for tranScribe Engraving

For best results, the line-work image that will be tranScribed should be created with a very high-resolution. When low resolution images are used, there may not be enough data for the tranScribe process and the results may not be satisfactory.

- The minimum resolution is 2000 dots per inch (dpi). The *recommended resolution*, especially for roman type characters and extremely fine lines, is 4000 dpi.

- The image can not have any tints, tonework, grayscales, or CTs in it: only black and white linework should be used for tranScribe engraving.

Tiff images should be created at the recommended resolution.

When pre-ripping PostScript and PDF images, rip at 4000 dpi.

Setting the Screen

In the Gravure Parameters window, set the resolution (the screen and the angle) to be a multiple of the original image resolution for optimum results.

If the engrave screen is not a multiple, there will be "left over" pixels. The tranScribe software may discard these partial cells, possibly producing unequal results across the cylinder. For example, the width of a character may use three revs in one location and only two revs in the next. Note that tranScribe filters provide control over left-over pixels through thresholding and AccuEdge.

The best engraving screen for use with tranScribe is a nearly "square" screen. For example, an image with a resolution of 80 pixels per mm is used on a cylinder with a screen of 141.42 lpcm (angle 45). The final engrave image will have a resolution like this:

    rev   19.999
    qcell   40.0125

with the engrave resolution 4 times the horizontal and twice the vertical resolution of the original image. This will produce the best results.

Using PostScript/PDF

Note: For the purpose of this document, PostScript and PDF are the same. The document will only used the term "PostScript".

Collage-E and RTI-E systems do not used already-ripped images. Instead they use native PostScript. Collage systems with the JawsRIP license may also use native PostScript images.

A PostScript image does not have any resolution. When native PostScript images are used in jobs to be tranScribed, the PostScript file is ripped based on the screen and angle set in the Collage Gravure Parameters or RTI-E Cylinder Editor before the tranScribe is performed.

For any job/cylinder with native PostScript images, use a high screen to get the detail needed. You may need to run some tests to determine the screen that will produce the best results for tranScribe engraving.

Note: On certain Collage computers with the JawsRIP license, native PostScript images may be used in the job. This is *not recommended* for jobs that will be tranScribed. It is better to pre-RIP the image at a high resolution and then create the job using that already ripped image.

Soft-Proofing

To view the tranScribed image:

1. Open the Soft-Proof Properties window.

2. Select Print Resolution, and turn on tranScribe.

   Note: The tranScribe option is not available if no tranScribe filter has been selected.

3. If using real-time tranScribe, you will need to zoom up closely before you will see the tranScribe results.

   With pre-processed tranScribe, you may be able to see a difference immediately, depending on the size of the cylinder/image.
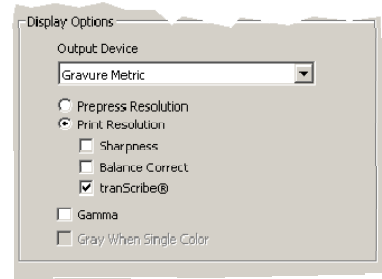
Selective Area tranScribe

Available for real-time tranScribe only and only in Collage / Collage-S

Just as you can set only some images on a cylinder or only some parts of an image to have gamma or sharpness (called Selective Area Gamma or Sharpness), you can do the same thing with tranScribe: on a tranScribe cylinder, use different filters in some areas.

For example, the black image data contains a few areas of negative text, but is mostly positive. Set a global tranScribe filter for the entire cylinder, then in the Position Editor, create relative placement elements around the negative areas and select the appropriate tranScribe filter for those area.

To use selective area tranScribe on a cylinder, you must first select a tranScribe filter for the entire cylinder, in Gravure Parameters. Selective area tranScribe filters are set in the Position Editor, for the selected positions. You can apply different selective area tranScribe filters to:

- the entire image element
- a relative placement element
- a color blocker
- a CharGen text element

Note: If a cylinder has been pre-processed, you cannot set selective area tranScribe.

Restrictions when using selective area tranScribe

A tranScribe filter must first be selected in Gravure Parameters. If it isn't, the tranScribe filter drop-down menu will be unavailable in Position Editor.

In the Position Editor, you may only select a tranScribe filter for the separation(s) that have filters selected in Gravure Parameters.

The selective area filters must be compatible with the job-level filter. Specifically, the following values must match: Method, Single Filter (Diamond v1), Width, Height, Shift, Deep Strikes, Horizontal Edge Depth, One Wide Height, and Two Wide Height.

A message displays if an incompatible tranScribe filter is selected in the Position Editor.

Touch Up and tranScribe

For Collage / Collage-S only

Touch Up and tranScribe are mutually exclusive for a given separation. You can do one or the other but not both. Both are intended to be the final step in producing engrave data. Notice in the Gravure Parameters window after selecting a tranScribe filter or touching up a separation, some fields for the separation can no longer be changed.

Changing Values in a Filter

The tranScribe filter is saved with the Collage job. Changes made to a filter are not automatically applied to the job. If you change values in a filter and save it with the *same name*, open the Collage job, and select that filter **again** on the Gravure Parameters window. We strongly recommend that you always use a new name when you make any changes to a tranScribe filter (or to a gamma or sharpness file). Please see the topic *Updating a tranScribe Filter in a Job* in the Collage online help.

If doing pre-process tranScribe: Any time you change a filter in the tranScribe Filter Editor, or select a new filter, or make certain changes to the job, such as changing the screen, you must re-tranScribe the job in the tranScribe Image Processor.

If doing real-time tranScribe: Any changes to a filter or the job can be immediately seen when soft-proofing.

For More Information

More information on using tranScribe filters in Collage is available in the online Help that comes with Collage. Look for *The tranScribe Engraving System* chapter.
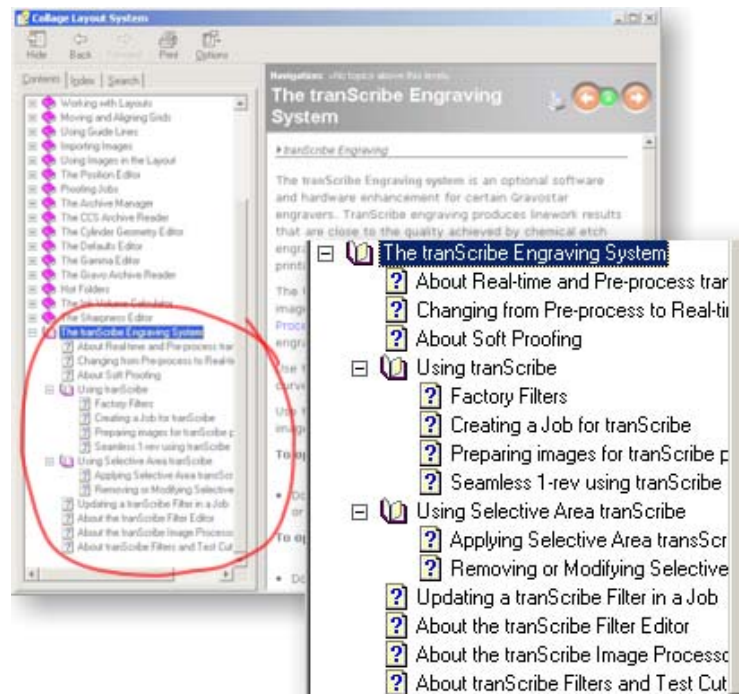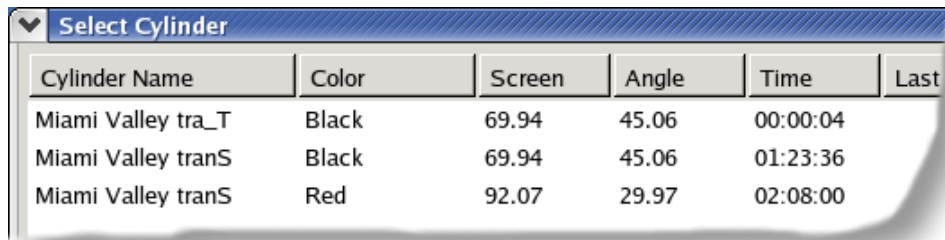
About tranScribe and Test Cuts

When any tranScribe filter method is used (other than Screenless) and the cylinder is set RFP, a special cylinder file is automatically created for engraving tranScribe test cuts. Generally, the tranScribe test cuts are engraved after normal test cuts.

The cylinder for the tranScribe test cut can be selected in the Select Cylinder window. It is named the same as the image cylinder but with "_T" at the end. The cylinder name may be truncated in order to fit the "_T" at the end.

The Select Cylinder window shows both the image cylinders and the "_T" cylinder for any cylinder with a tranScribe filter (except Screenless).

About Cylinder Names

Cylinder names are limited to 20 characters. When a tranScribe test cut cylinder is created, the cylinder name is truncated, if necessary, to allow the addition of the "_T" at the end. When the job name is long, you may have a situation where several cylinders and their test cut cylinders have the same names.

Cylinder Name	Color	Screen	Angle	Time	Last
Miami Valley tra_T	Black	69.94	45.06	00:00:04	
Miami Valley tranS	Black	69.94	45.06	01:23:36	
Miami Valley tranS	Red	92.07	29.97	02:08:00	

Using tranScribe with RTI-E

The basic steps for using tranScribe Engraving on an RTI-E are:

1. Use the tranScribe Filter Editor to create the desired tranScribe filter. Filters are stored on the RTI-E computer. Filters can be copied to and from floppy using the Export and Import commands.

2. In the RTI-E Cylinder Editor, select the image and a tranScribe filter. Set the other values. Save the cylinder.

3. In the Engrave Window, select the cylinder.

Ripping and tranScribing are done "on the fly" -- as the cylinder is engraved.

Soft Proofing In RTI-E

In the RTI-E Cylinder Editor, you cannot view the cylinder.

Instead, in the Engrave window, go to Utilities and Preview the cylinder.

Test cut cylinders

Just as with Collage, in RTI-E, when a cylinder uses tranScribe, a special tranScribe test cut cylinder is also created. It is named the same as the cylinder but with "_T" at the end.

Working with the tranScribe Filter Editor

The tranScribe Filter Editor window allows you to adjust the values of the pixels which make up an individual engraved cell. The cell is created using either 5, 8 or 12 separate values.

There are two groups of filters which produce the two basic shapes:

a bat-shaped cell

(Pictures are illustrations only and do not show actual tranScribe-engraved cells.)

a diamond-shaped cell

The filter editor changes depending on which filter type is selected. Some filter methods allow you to specify pixel values at edges (black to white transitions), which are set on the Horizontal Edge and Vertical Edge pages.
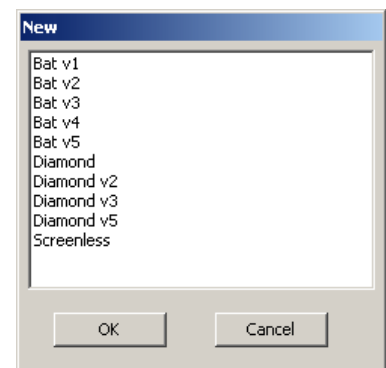
Filter Methods

The New dialog lists ten filter methods: five to create bat cells, four to create diamond cells, and one for a screenless filter.

Recommended Methods

We recommend you create new filters using the following methods: **Bat v4**, **Bat v5**, **Diamond v5**, and **Screenless**.

All other filter methods are included only for backward compatibility.

New Names

In version 3.1.6 some methods were renamed:

3 Wide Regular is now called Bat v1
3 Wide Screen is now called Bat v2
3 Wide Fixed is now called Bat v3

Factory Filters

The tranScribe Filter Editor ships with several factory filters—filters with values that are good starting points. Factory filters cannot be deleted or changed. The only way to change a factory filter is to save it under a new name.

Using the Canvas

On the right side of the window is the 'canvas' which simulates the cell that will be produced; the canvas changes according to the filter type.

In the editor, you select a pixel and then set the value for it. Select the pixel either in the list area or in the canvas.

For example, in the picture below, Channel is selected in the list on the left, and the **C**'s in the canvas on the right are highlighted. Changing the value of the Channel changes the engraved cell in the areas indicated.
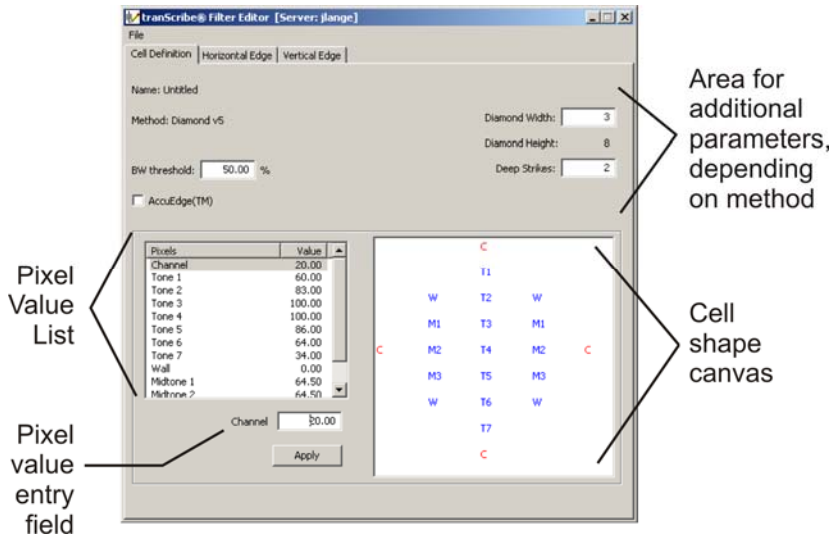
Depending on the filter type, additional parameters can be set, including the BW Threshold, AccuEdge™, Horizontal Edge and Vertical Edge.

Managing Files in the tranScribe Filter Editor

Use the commands on the File menu of the tranScribe Filter Editor to create and manage filters.

Opening the tranScribe Filter Editor

To open the tranScribe Filter Editor:

In Collage or RTI-E on Linux

• Double-click the tranScribe Filter Editor desktop icon.

In RTI-E on Solaris
1. Right-click anywhere on the desktop to display the desktop menu.
2. Left-click on RTI-E tranScribe Filter Editor

When the tranScribe Filter Editor opens, the default method is the last method used to create a tranScribe filter.

Creating a New tranScribe Filter

1. On the File menu, select New.

2. Select the tranScribe method you want to use. Note that this method cannot be changed inside the editor.

3. Click OK. The window displays with the default values for this method.

Note: The editor opens with the last-used filter type selected.

Opening an Existing tranScribe Filter

1. On the File menu, select Open. A window listing existing filters opens.

2. Select the filter you want to open and click OK.

Note: You can change values but you cannot change the method.

Saving a tranScribe Filter

To save a new filter:
1. On the File menu, click Save As.
2. Enter the name and click OK.

To save a changes to an existing filter:
- On the File menu, click Save.

Note: The Save item is unavailable until you make a change to a saved filter.

Saving a tranScribe Filter with a New Name

1. On the File menu, click Save As....

2. Enter a new name and click OK.

Deleting a tranScribe Filter

A tranScribe filter is a small text file that doesn't take up much space on the computer, but it is still a good idea to delete files you don't need. This will reduce the size of the list of filters, making filter selection easier.

To delete a filter:

1. On the File menu, click Delete. A window listing filters displays.

2. Select the filter you want to delete and click OK.

3. Click Yes to confirm that you want to delete the file, or No to abort the delete procedure.

Transferring tranScribe Filters - RTI-E

TranScribe filters can be transferred between two systems. The files must be copied to a floppy for transfer. The floppy must be formatted on a PC.

To copy a tranScribe filter from the RTI-E to a floppy:

1. Insert a formatted floppy into the RTI-E's drive.

2. In the tranScribe Filter Editor, from the File menu, select Export. After a moment, a window opens listing the tranScribe filters on the RTI-E.

3. Select the filter to export. Multiple filters can be selected. Click OK.

The files are copied to the floppy, and the floppy is automatically ejected from the floppy drive.

To copy a tranScribe filter from a floppy to the RTI-E:

1. Insert the floppy into the RTI-E's drive.

2. In the tranScribe Filter Editor, from the File menu, select Import. After a moment, a window opens listing the tranScribe filters on the floppy.

3. Select the filter to import. Multiple filters can be selected. Click OK.

The files are copied to the tranScribe filter folder on the RTI-E, and the floppy is automatically ejected from the floppy drive.

Transferring tranScribe Filters - Collage

On a Collage system, the tranScribe Filter Editor's File menu does not include the Import or Export commands.

To transfer files to another system, use the Archive Manager. Create a new archive; copy the tranScribe filters to the archive; then transfer the archive to the other Collage system.

Setting Values for a tranScribe Filter

The tranScribe Filter Editor gives you complete control over tranScribe engraving, including the ability to modify the basic cell shape and, with some filters, to boost cell sizes along both the Horizontal and Vertical Edges of lines.

For many applications, the default tranScribe filter settings will produce satisfactory results. However, you will probably want to run tests to compare the results of different filter settings, to determine the best values for a particular set of job variables (image, inks, substrates, and so on).

The tranScribe Filter Editor has from one to three pages, depending on the filter method: Cell Definition, Vertical Edge, and Horizontal Edge. The Cell Definition page, for defining cell characteristics, is used for all methods, while the Edge pages, used to define edge characteristics, is only available with some methods.

Additionally, for the Bat v4, Batv5 and Diamond v5 filters, you can turn on the AccuEdge™ checkbox. When this is on, edge cells are modified based on the input pixel density. A more accurate edge resolution is created, for better placement of edges. All factory filters have AccuEdge turned on.

Following are explanations of the various tranScribe parameters. Not all tranScribe methods use all parameters. This section describes the parameters on the Cell Definition page; the next section discusses the parameters of the Vertical and Horizontal Edge pages.

About the tranScribe Methods

There are several methods for creating filters and the tranScribe Filter Editor displays different parameters for each method. When a new filter is created, you first select the method. You cannot change the method once a filter has been created, although you can change the values.

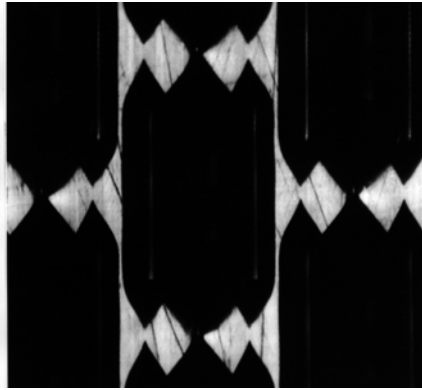The methods available create cells in one of three shapes:

- bat-shaped cells
- diamond-shaped cells
- screenless (single rev strikes in the image areas)

The following pictures show samples of diamond cells and bat-shaped cells:
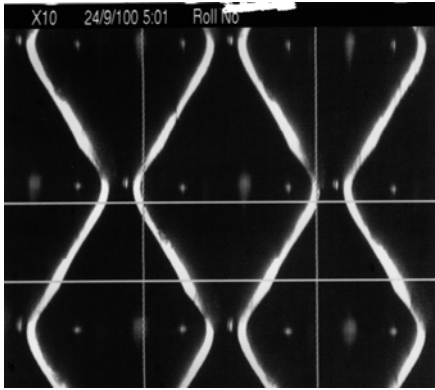
Diamond-shaped cells   *Bat-shaped cells*

Bat v1
(formerly Three Wide Regular)

This filter uses a different algorithm from Bat v2 to produce normal post cells. You may find that Bat v1 makes better cells for large areas.

Bat v2
(formerly Three Wide Screen)

This filter creates a normal post cell (with the filter's default value).

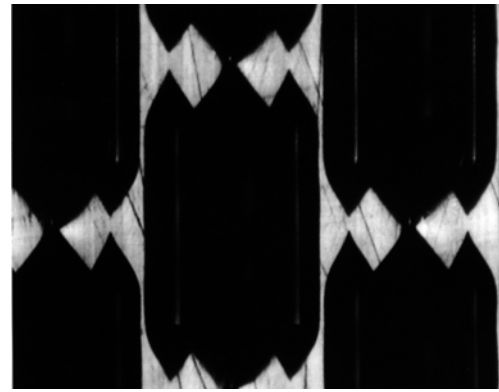*Bat v2* and *Bat v1*

Bat v3
(formerly Three Wide Fixed)

This filter uses a fixed screen for the entire image, with enhancement at the image edge. This filter allows you to enter values for more areas of the cells; for example, the center (Post) and outer (MidPost).

The **Bat v1**, **Bat v2** and **Bat v3** filters all produce 3, 4, and 5 wide cells, depending on image data. The **Bat v3** filter provides 4 and 5 wide tone control to balance ink density, as well as a setting to smooth horizontal edges.

Bat v3, Bat v4, and Bat v5

Bat v4 and Bat v5

We recommend you use these newer filters, instead of the deprecated Bat v1, v2, and v3. The newer filters provide more parameters for better control over cell creation and edges. Both filters allow you to turn on AccuEdge™ and both include the Horizontal Edge and Vertical Edge pages.
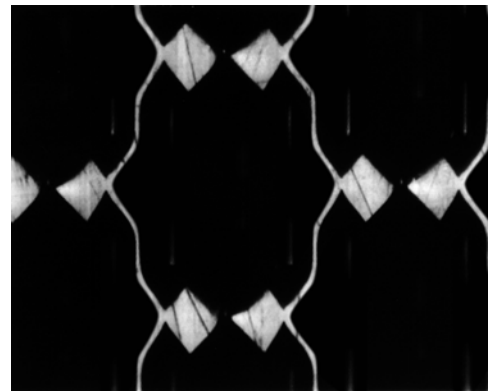
Screenless

This filter does not use a screen. Instead all pixels are set to a single value. Used in limited applications, such as extremely fine text, where the character is the cell. With a Screenless filter, there are no conventional cells. Instead, single rev strikes are engraved in the image areas.

The Diamond Filters

These filters create a cell that is closer to the standard diamond gravure cell, but with better edging. The cell created is shaped like the traditional gravure diamond.

We recommend only using the **Diamond v5** filter.

The **Diamond** filter is the basic filter. Edge values are built in to the filter.

The **Diamond v2** filter is similar to Diamond, but includes vertical edge and horizontal edge pages. The parameters on these pages provide edge detail for smoother printing of both horizontal and vertical edges.

The **Diamond v3** filter allows you to define varying cells for different parts of image data.

The **Diamond v5** uses bat cells at the edges, similar to the algorithm used in Bat v5. In addition to the edge pages, it also includes the AccuEdge™ option.

Note: There is no Diamond v4 filter.

tranScribe Examples

The appearance of a tranScribe image viewed in Collage and the actual engraved results are quite different.

The following pictures show soft-proof results of applying a tranScribe filter to an image (one positive and one negative). With real-time tranScribe, it is very simple to change a filter and see if the new filter provides better results.
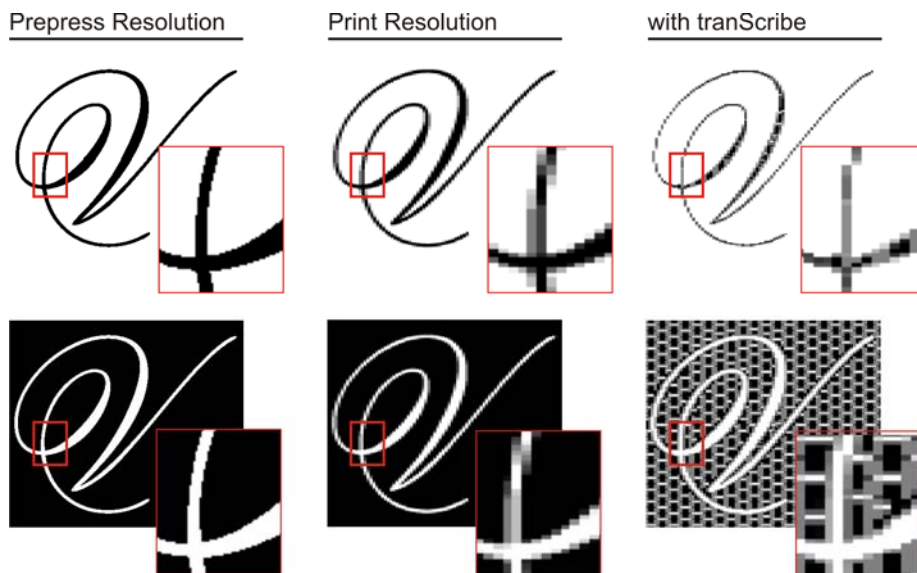
The Cell Definition Page

Use the Cell Definition page of the tranScribe Filter Editor to tailor the cell shape needed for the type of work to be engraved. The parameters that display on this page vary according to the method selected.

For all methods, this page includes the Pixel-Value List, Pixel value entry field, and the Cell Shape Canvas. Additional parameters, in the top area, vary according to the method.
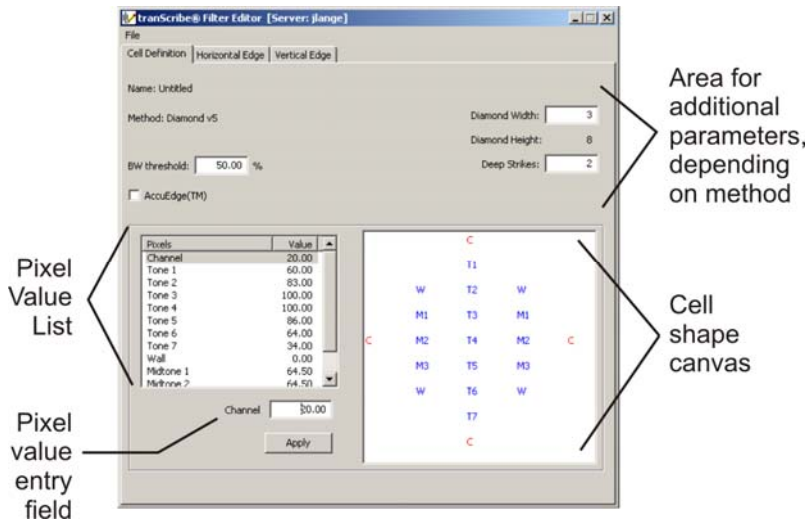
Pixel Editing

The Pixel-Value list shows the cell positions and the value used to engrave at that position. These positions are named, such as the Post, Shape, Tone, and so on.

The Cell Shape Canvas depicts the shape of the cell and the location of the pixels used to engrave that cell. A letter in the canvas corresponds to an item in the Pixel list, such as "P" for Post, "S" for Shape, and so on.

Adjusting the values changes the way a cell is engraved. Changing any value changes the size of that pixel. Care should be taken when making changes as it may impact an adjacent pixel. For example (in the Diamond v2 method), increasing the Channel value increases the channel size. The larger channel, however, may require you to reduce the size of the Midtone 2 value to prevent the wall from being destroyed.

Entering Values for a Pixel

To set the value for a pixel:

1. In the Pixel - Value box, select the pixel.

    Or, in the canvas area, click the letter for the pixel.

    The line becomes highlighted, and in the canvas area, the letter for this pixel becomes highlighted in red. The value of this pixel displays in the pixel value entry field.

2. In the Pixel value entry field, enter a new value for the pixel. The range of valid values is from 0 to 100.
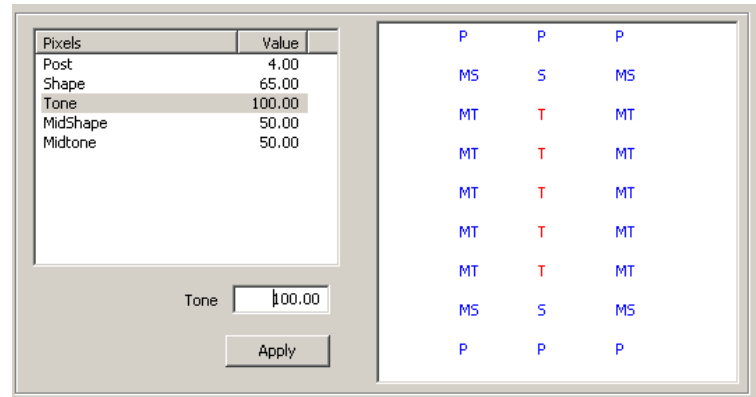
3. Click Apply, or press the Enter key.

Pixel Value Items

The items in the Pixel-Value list vary according to the method selected. This section explains the meaning of the items in the Pixel-Value list.

The Bat Methods

All Bat methods include the items shown in this picture:

Bat v3, v4 and v5 include additional items. The table below lists all possible items.

Type	Available in	Notes
Post	Bat v1, v2, v3, v4, v5	The wall or channel between vertically placed cells
Shape	Bat v1, v2,	The pixel nearest the post. Affects the shaping and size of the wall/channel
Shape 1	Bat v3, v4, v5	The pixel nearest the post. Affects the shaping and size of the wall/channel
Shape 2	Bat v3, v4, v5	Second pixel from the Post. Generally set the same as Tone
Tone	Bat v1, v2, v3, v4, v5	Center and deepest portion of the cell
Mid Post	Bat v3, v4, v5	Sames as Post but for (side) mid-strike
MidShape	Bat v1, v2, v3, v4, v5	Typically this is set to the same value as the mid tone, which prevents visible channels. Sames as Shape but for (side) mid-strike
MidTone	Bat v1, v2, v3, v4, v5	The mid-strike (mid-tone). We recommend this is not changed.
MidCenter	Bat v3, v4, v5	Used to flare out the sides to reduce Post area of adjacent columns

The Bat v4 and Bat v5 also include the Horizontal Edge and Vertical Edge pages. See the next section for information on the Edge pages.
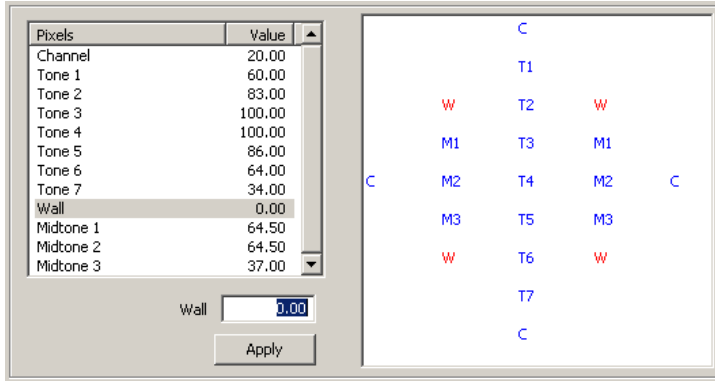
Screenless

Type	Default value	Notes
MidTone	50.00	The mid-strike (mid-tone).

The Diamond Methods

The pixel values create the diamond shape of the cell as well as the cell depth. They should not be viewed from a depth perspective only.

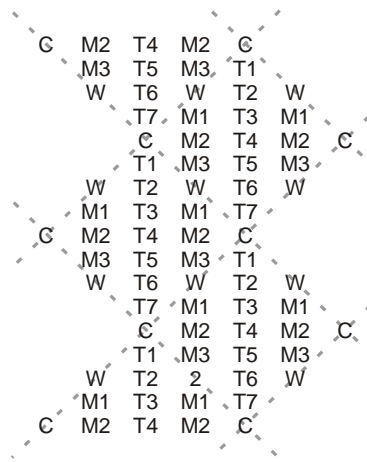All Diamond methods include these items in the Pixel-Value list.

Type	Notes
Channel	Controls the size of the channel between deep strikes. Increasing the value increases the channel size.
Tone 1	Affects how the stylus enters the copper during the deep strike. Increasing the value increases the pixel size during engraving.
Tone 2	Affects how quickly the stylus enters the copper during the deep strike. Increasing the value increases the pixel size during engraving
Tone 3	Controls the deepest part of the cell. These are normally left unchanged.
Tone 4	
Tone 5	Affects the stylus as it exits the cell and helps to shape the cell. Increasing the value increases the pixel size during engraving.
Tone 6	
Tone 7	
Wall	Wall controls the width of the wall between cells. Decreasing the value of the Wall increases the wall thickness.
Midtone 1	Affects how the stylus enters the copper during the edge strike and helps define the edge cell shape. Increasing the value increases the pixel size during engraving.
Midtone 2	Controls the deepest part of the edge strike and can be used to increase the width of the overall cell. Increasing the value increases the pixel size during engraving.
Midtone 3	Affects how the stylus leaves the copper during the edge strike and helps define the cell shape. Increasing the value increases the pixel size during engraving.

The following graphics show three cell patterns – 3x8, 5x12 and 7x16 – with multiple cells and how the pixel values are used to create the cells.
(See *Diamond Height* on page 20 for explanations of the cell patterns.)
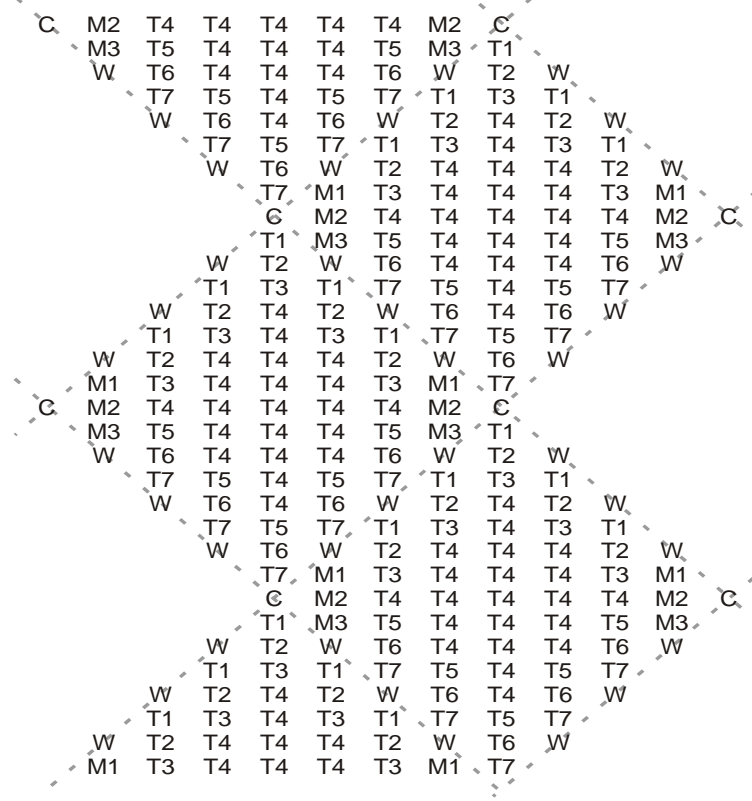
Examples of Diamond Cell Patterns

3x8 Cell - Use with a 141 l/cm base screen.

```
C   M2   T4   M2   C
 M3   T5   M3   T1
  W    T6   W    T2   W
   T7   M1   T3   M1
    C    M2   T4   M2   C
   T1   M3   T5   M3
  W    T2   W    T6   W
   M1   T3   M1   T7
C   M2   T4   M2   C
 M3   T5   M3   T1
  W    T6   W    T2   W
   T7   M1   T3   M1
    C    M2   T4   M2   C
   T1   M3   T5   M3
  W    T2   2    T6   W
 M1   T3   M1   T7
C   M2   T4   M2   C
```

5x12 Cell - Use with a 212 l/cm base screen.

```
    C   M2   T4   T4   T4   M2   C
     M3   T5   T4   T5   M3   T1
      W    T6   T4   T6   W    T2   W
       T7   T4   T7   T1   T3   T1
        W    T6   W    T2   T4   T2   W
         T7   M1   T3   T4   T3   M1
          C    M2   T4   T4   T4   M2   C
         T1   M3   T5   T4   T5   M3
        W    T2   W    T6   T4   T6   W
         T1   T3   T1   T7   T5   T7
        W    T2   T4   T2   W    T6   W
         M1   T3   T4   T3   M1   T7
      C    M2   T4   T4   T4   M2   C
       M3   T5   T4   T5   M3   T1
      W    T6   T4   T6   W    T2   W
       T7   T5   T7   T1   T3   T1
      W    T6   W    T2   T4   T2   W
       T7   M1   T3   T4   T3   M1
        C    M2   T4   T4   T4   M2   C
       T1   M3   T5   T4   T5   M3
      W    T2   2    T6   T4   T6   W
       T1   T3   T1   T7   T5   T7
      W    T2   T4   T2   W    T6   W
       M1   T3   T4   T3   M1   T7
    C   M2   T4   T4   T4   M2   C
     M3   T5   T4   T5   M3
```

7x16 Cell - Use with a 282 l/cm base screen.

```
  C   M2   T4   T4   T4   T4   T4   M2   C
   M3   T5   T4   T4   T4   T5   M3   T1
   W    T6   T4   T4   T4   T6   W    T2   W
    T7   T5   T4   T5   T7   T1   T3   T1
    W    T6   T4   T6   W    T2   T4   T2   W
     T7   T5   T7   T1   T3   T4   T3   T1
    W    T6   W    T2   T4   T4   T4   T2   W
     T7   M1   T3   T4   T4   T4   T3   M1
      C    M2   T4   T4   T4   T4   T4   M2   C
     T1   M3   T5   T4   T4   T4   T5   M3
    W    T2   W    T6   T4   T4   T4   T6   W
     T1   T3   T1   T7   T5   T4   T5   T7
    W    T2   T4   T2   W    T6   T4   T6   W
     T1   T3   T4   T3   T1   T7   T5   T7
    W    T2   T4   T4   T4   T2   W    T6   W
    M1   T3   T4   T4   T4   T3   M1   T7
  C   M2   T4   T4   T4   T4   T4   M2   C
   M3   T5   T4   T4   T4   T5   M3   T1
   W    T6   T4   T4   T4   T6   W    T2   W
    T7   T5   T4   T5   T7   T1   T3   T1
    W    T6   T4   T6   W    T2   T4   T2   W
     T7   T5   T7   T1   T3   T4   T3   T1
    W    T6   W    T2   T4   T4   T4   T2   W
     T7   M1   T3   T4   T4   T4   T3   M1
      C    M2   T4   T4   T4   T4   T4   M2   C
     T1   M3   T5   T4   T4   T4   T5   M3
    W    T2   W    T6   T4   T4   T4   T6   W
     T1   T3   T1   T7   T5   T4   T5   T7
    W    T2   T4   T2   W    T6   T4   T6   W
     T1   T3   T4   T3   T1   T7   T5   T7
    W    T2   T4   T4   T4   T2   W    T6   W
    M1   T3   T4   T4   T4   T3   M1   T7
```

Parameters (top of window)

The rest of this chapter explains all the parameters that could be in the top area of the Cell Definition page. Not all items are available for all methods. For each item, the methods that include it are noted.

AccuEdge™

Methods: Bat v4, Bat v5, Diamond v5
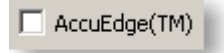
When this is on, edge cells are modified (boosted or reduced) based on the input pixel density. A more accurate edge resolution is created, for better placement of edges.

When AccuEdge is turned on, it alters how the BW threshold is applied, to improve the boost and reduction capabilities (see below).

An example of using AccuEdge is for verical barcodes. Without tranScribe, the widths of the bars could vary by a rev, depending on where the bars fall on the cylinder. With a tranScribe filter with AccuEdge on, the engraved results would more closely match the original image data.

Black/White Threshold

Available for all methods

Valid values: 0 to 100 in percent. Default value: 50 %

The threshold is the point at which pixels are pushed to white or black. The tranScribe rescreening process initially creates partial cells. These are then set to white or black, based on the threshold value. This parameter has different effects, depending on whether or not AccuEdge is turned on.

BW Threshold without AccuEdge

A value of 100 would produce an all-white image and a value of 0 will push all non-zero data to black. With the default of 50, all pixels from 0 to 50% are pushed to white, and all pixels from 51 to 100% are pushed to black.

Setting the B/W Threshold higher forces more partial cells to white and eliminates them from engraving. This may be desired where soft edges are seen as a result of a scanned Tiff file.

Setting this number to a lower number creates more partial cells. This could increase the thickness of a line that is too narrow.

BW Threshold with AccuEdge turned on

Only available for Bat v4, Bat v5, Diamond v5

The default threshold of 50% would result in no boost or reduction. A value less than 50% produces more boosting, with 0 producing the maximum amount of boost. A value greather than 50% produces more reduction, with 100 giving the maximum amount of reduction.

The maximum boost or reduction is 1 pixel circumferentially and 1/2 rev axially.

The tranScribe rescreening creates partial cells, then the boost/reduction is applied to the edge cells which are set to white if less than 50% or black if 50% or greater.

Cell Width, Cell Height, Cell Shift

Methods: Bat v4 and Bat v5

Cell Width sets the width of the bat cell, in strikes. With a value of 3 or greater, the cell is made of two mid-tone strickes and one (or more) deep strikes.

Cell Height sets the number of pixels used to create the cell.

Cell Shift specifies how cells nest from rev to rev.

Valid values are from 0 (no nesting) to 1 less than the Cell Height.
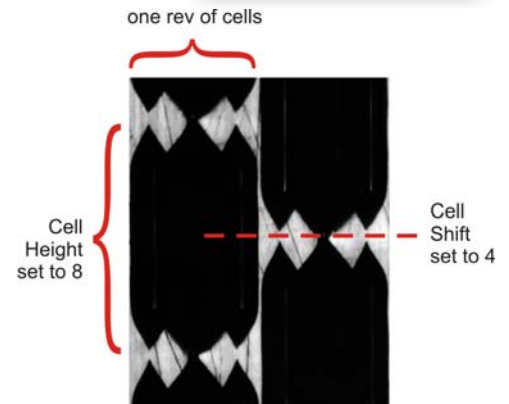
Diamond Width

Methods: Diamond v2, v3, and v5

Sets the width of the diamond shaped cell. The minimum width is 3, meaning that three strikes are used to make the cell — two mid-tone strikes and one deep strike. Other possible widths are 5 and 7, based on the screen being engraved.

The effective screen becomes coarser as the Diamond Width increases.
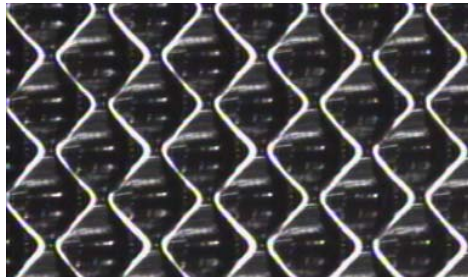
3-wide Diamond Width with 1 deep strike

The following graphic illustrates the three strikes made by the stylus to create a 3-wide diamond cell. Note the first and third strike are much smaller and shape the widest point of the cell. The second strike, or center strike, is the deep strike and provides the greatest cell volume.
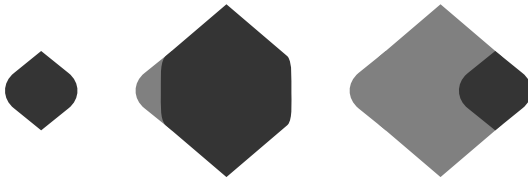
3-Wide Diamond Width

The next two graphics illustrate the a 5-wide diamond cell and 7-wide diamond cells.
As with a 3-wide cell, the first and last strikes shape the widest point of the cell.
For a 5-wide cell, the second and fourth strikes are intermediate strikes to help increase cell volume. A 7-wide cell has four intermediate strikes – 2, 3, 5, and 6. The center strike, either the third or fourth, is the deep strike and provides the majority of the cell volume.
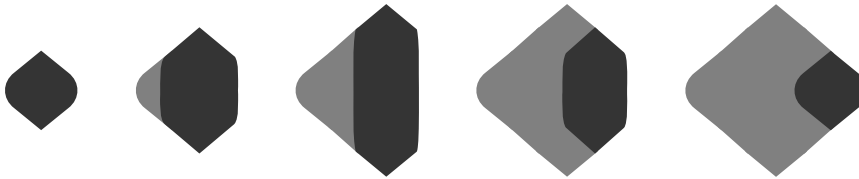
5-Wide Diamond Width

7-Wide Diamond Width

Edge detail increases as the Diamond Width number increases. Please note in the following bullet points the screen being used to create 3-, 5-, or 7-wide cells is finer than the effective screen. Engraving times increase as you increase the Diamond Width.

- A 3-Wide is good for a 141 l/cm screen, yielding an effective screen of 70 l/cm.

- A 5-Wide is good for a 212 l/cm screen (effective 70 l/cm).

- A 7-Wide is good for a 282 l/cm screen (effective 70 l/cm).

Note: Even though the effective engraving screen is 70 l/cm, the depth of the cell is not the same for the 5-wide and 7-wide cells. A 3-wide diamond using a 110° stylus provides ink coverage similar to a conventional 70 l/cm with a 120° stylus. A 5-wide and 7-wide diamond using a 110° stylus produces less ink volume. The benefits of the 5- and 7-wide cells are the greater resolution for sharp image detail.

Diamond Height

Methods: Diamond v2, v3, and v5

The number of pixels used to create the tranScribe cell. This is automatically calculated by Collage based on the Diamond Width.

Diamond Width:	3
Diamond Height:	8
Deep Strikes:	2

To understand the calculation:

Diamond Height = (Diamond Width +1) x 2

A 3-Wide diamond width results in a diamond height of 8 pixels. The resulting cell is often called a 3x8 for 3 wide by 8 high. Seven of these pixels are used to create the cell, the remaining pixel is used for the channel.
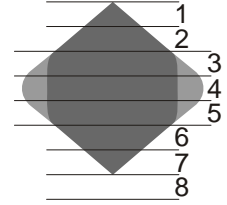
A 5-Wide diamond results in a diamond height of 12 pixels, or 5x12.

A 7-Wide diamond results in a diamond height of 16 pixels, or 7x16.

Deep Strikes

Methods: Diamond v2, v3, and v5

A normal tranScribe cell uses three strikes to create a cell, two mid-tone strikes and one deep strike. The Deep Strikes control allows you add additional deep strikes to create the cell.

The following graphic shows how two deep strikes are used to create the cell. This increases the horizontal cell width and ink volume while still providing excellent resolution in the vertical direction.
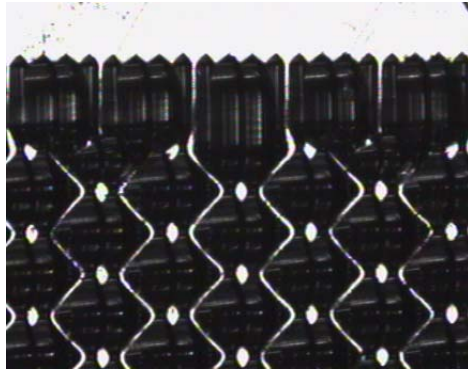
3-wide Diamond Width
with 2 deep strikes
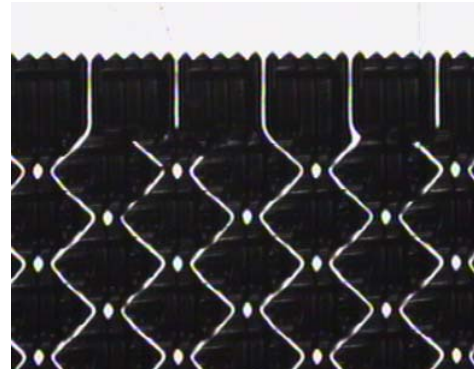
5-wide Diamond Width
with 2 deep strikes

3-Wide Diamond Width with Two Deep Strikes

Increasing the number of deep strikes also changes the way a channel is engraved. A channel is created for each deep strike, so for two deep strikes, two channels are made. This creates a small island or 'post' between the two channels. The following picture shows this post.

The circles highlight the posts between channels in double strike engraving.

Note: Looking at the pictures, you can see the image edge is smoother using the 5-wide setting. This is due to more strikes being used to engrave the cell, not the number of deep strikes.
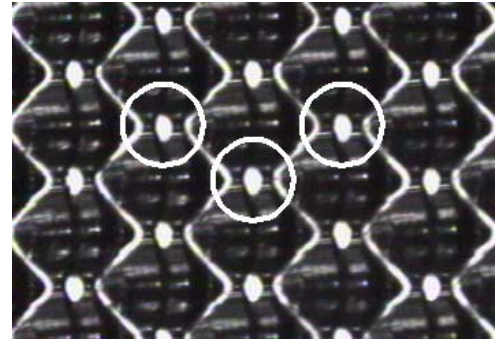
Four Wide Tone

Method: Bat v3

Specifies the Tone value for a cell that is four strikes wide instead of the normal three strikes wide. Valid values are from 0 to 100 in percentage, but you should keep within 65% to 100%. The default is 74%.
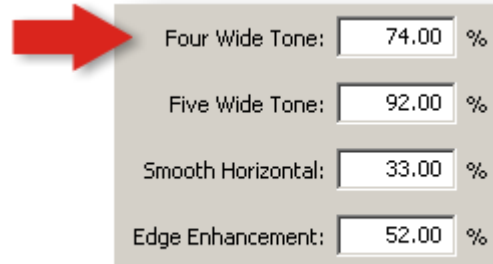
Five Wide Tone

Method: Bat v3

Specifies the Tone value for a cell that is five strikes wide instead of the normal three strikes wide. Valid values are from 0 to 100 in percentage, but you should keep within 85% to 100%. Default is 92%.
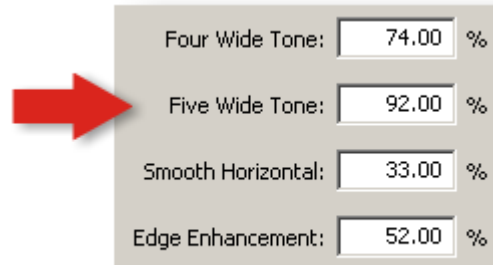
Smooth Horizontal

Method: Bat v3

Use to smooth horizontal edges.

Valid values are from 0 to 100 in percentage. The default is 33.00%
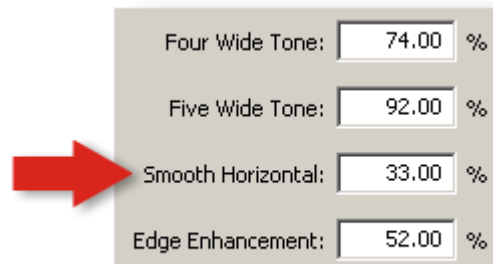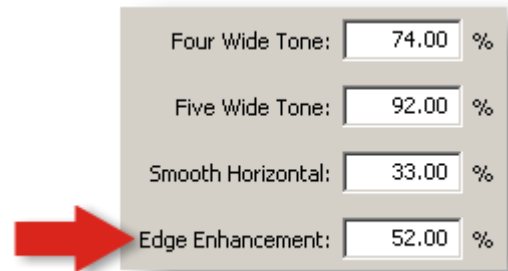
Edge Enhancement

Methods: Bat v3 and Diamond

Edge Enhancement values are from 0 (no edge enhancement) to 100 (greatest edge enhancement) in percent.

Use edge enhancement to improve the appearance of the edges.

Four Wide Tone:	74.00 %
Five Wide Tone:	92.00 %
Smooth Horizontal:	33.00 %
Edge Enhancement:	52.00 %

Single Filter

Method: Diamond

☐ Single Filter

Select the Single Filter checkbox to create a very simple, basic filter to create the diamond tranScribe cells. When the Single Filter checkbox is selected:

- No Edge Enhancement is applied. Note that when Edge Enhancement is set to 0, there is still some minimal enhancement that is done by the filter calculations.

- Some of the internal calculations use to create the diamond tranScribe cells are not used. Using Single Filter removes those additional calculations.

Pixel Definition

Only for Diamond v3

The Diamond v3 filter allows you to define values for pixels in various locations of an image.

Basic Cell defines cells inside the image data.

Top defines a cell at the top edge of the image data.

Top + 1 defines the cell immediately below the top cell.

Bottom defines the cell a the bottom edge of image data.

Bottom - 1 defines the cell immediately above the Bottom cell.

Diagonal defines a cell at the edge of a diagonal portion of the image data.

Vertical defines a cell at the edge of a vertical portion of the image data.

1-Pixel Wide defines a cell in a vertical line that is 1 pixel (one cell) wide.
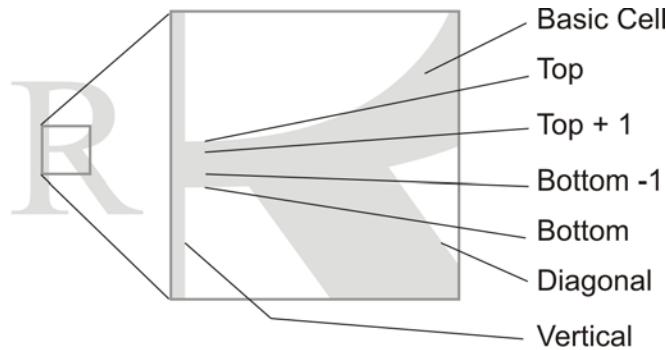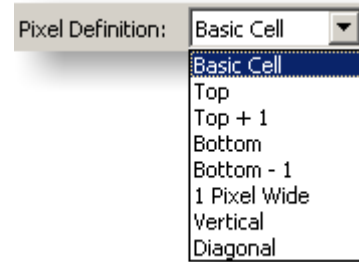
Following are the default values:

	Basic Cell	**Top**	**Top + 1**	**Bottom**	**Bottom - 1**	**1 Pixel Wide**	**Vertical**	**Diagonal**
Channel	20.00	42.00	20.00	42.00	20.00	64.50	20.00	20.00
Tone 1	60.00	60.00	60.00	60.00	60.00	37.00	64.50	60.00
Tone 2	83.00	62.00	83.00	50.00	83.00	17.00	64.50	83.00
Tone 3	100.00	62.00	100.00	50.00	68.00	64.50	40.00	83.00
Tone 4	100.00	62.00	100.00	50.00	68.00	64.50	30.00	83.00
Tone 5	96.00	62.00	86.00	50.00	68.00	37.00	64.50	83.00
Tone 6	64.00	62.00	64.00	50.00	64.00	17.00	64.50	64.00
Tone 7	34.00	68.00	34.00	50.00	34.00	64.50	37.00	34.00
Wall	0.00	42.00	12.00	42.00	12.00	17.00	20.00	17.00
MIdtone 1	64.50	64.50	64.50	64.50	64.50	64.50	64.50	64.50
MIdtone 2	64.50	64.50	64.50	64.50	64.50	64.50	64.50	64.50
MIdtone 3	37.00	37.00	37.00	37.00	37.00	37.00	37.00	37.00

Using the Edge Pages

The tranScribe process does not use traditional edge enhancement. The tranScribe Vertical Edge and Horizontal Edge pages include features that can be compared to edge enhancement but are uniquely different. The settings are complex, so be certain you understand how the various settings affect the engraved results before running your production jobs.

The Edge pages are available for the following methods: Bat v4 and v5, and Diamond v2 and v5.

Note that for the Diamond method, there is a single setting for Edge Enhancement. and for Diamond v3, the Pixel Definition allows definition of edge cells.

The Diamond v2 and Diamond v5 methods of tranScribe actually use a mix of the diamond screen and the bat-shaped cell screen. Large areas of solid are engraved using the diamond screen, as shown in the following picture.
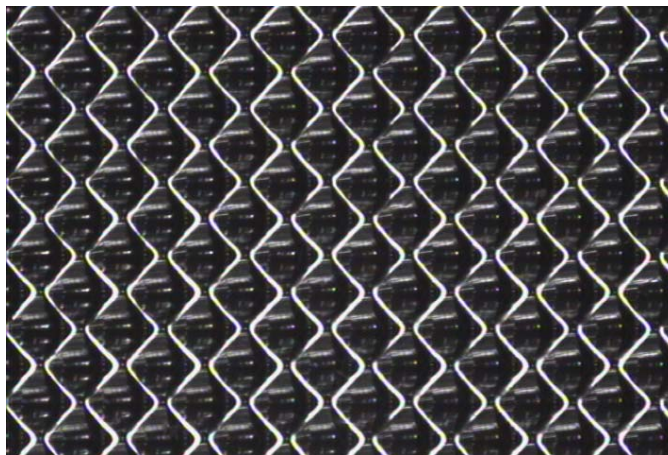
Example 1
A solid tone area showing three-wide diamond cells with a single deep strike.

When edges are seen, the tranScribe system automatically creates a mix of diamond cells and bat-shaped cells. The following pictures show how the two interact.
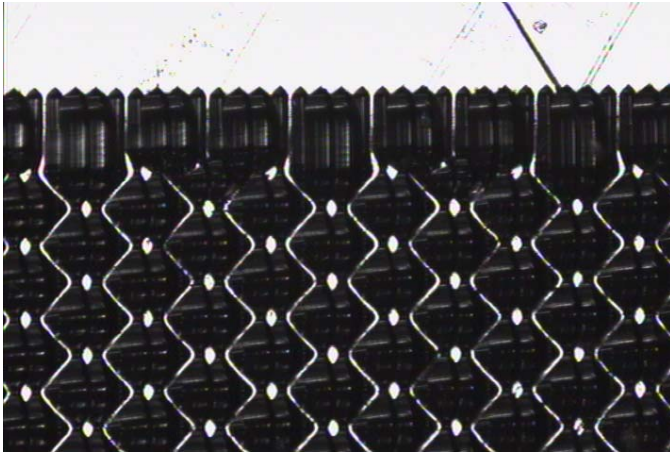
Example 2
A horizontal edge showing a mix of grooves, to create a smoother edge, and diamond cells for smoother tone printing.
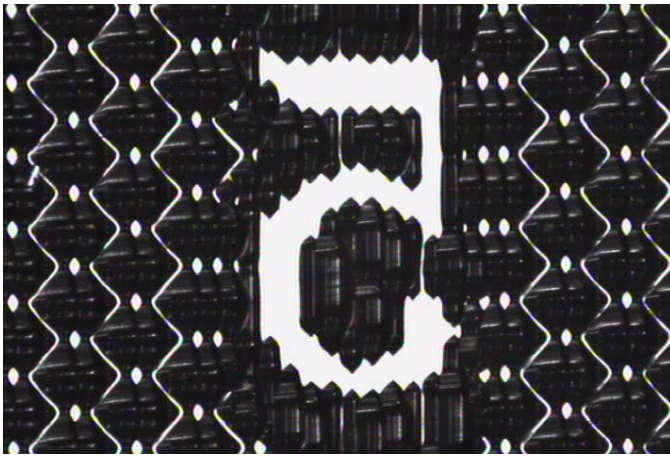
Example 3
A second look at how the tranScribe system mixes both diamond cells and grooves to create highly detailed images. Actual size of the engraved character is 5 points.

This mixing of cells can be controlled, with virtually every pixel used to create a tranScribe cell adjustable in the filter editor. These settings, on the Horizontal Edge and Vertical Edge pages, are used to sharpen the image edges.

Use the following graphic to understand how the Isolated, 1-High, 2-High, 3-High, 4-High and 5-High settings look at the image pixels (data).

Engraving direction

Isolated pixel
1-High pixels
2-High pixels
3-High pixels
4-High pixels
5-High pixels
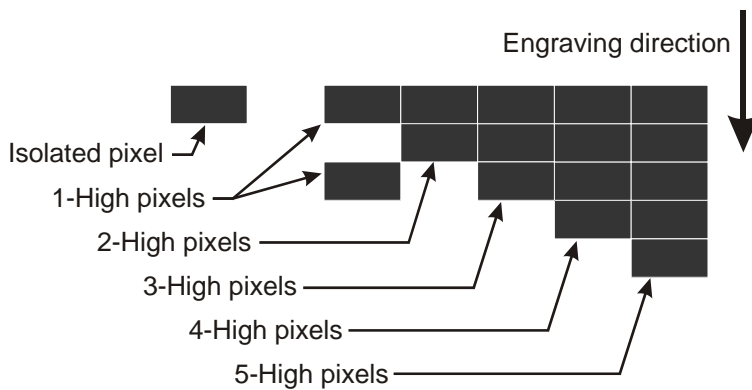
Horizontal Edge
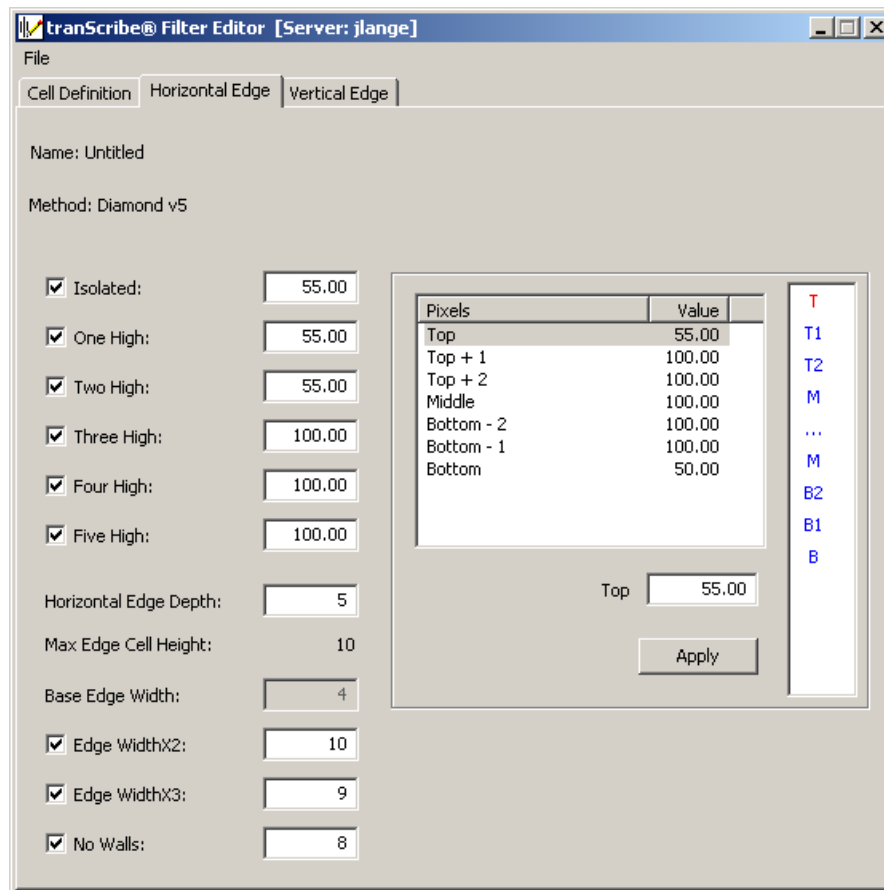
Isolated

Use Isolated to boost the size of a single isolated pixel (no adjoining pixels at any point). It can also be used to eliminate stray pixels that might be considered dirt. (Dirt is not likely to occur with pure digital images but may occur with high resolution bitmaps created from scans.)

Default value is 55. Increase the value to make the cell larger. Decrease the value to make the cell smaller. A zero eliminates the pixel from engraving.

One High

Use One-High to boost the size of a single pixel. Single pixels are different from isolated pixels in they have another adjoining pixel with image data touching them. Default value is 55.
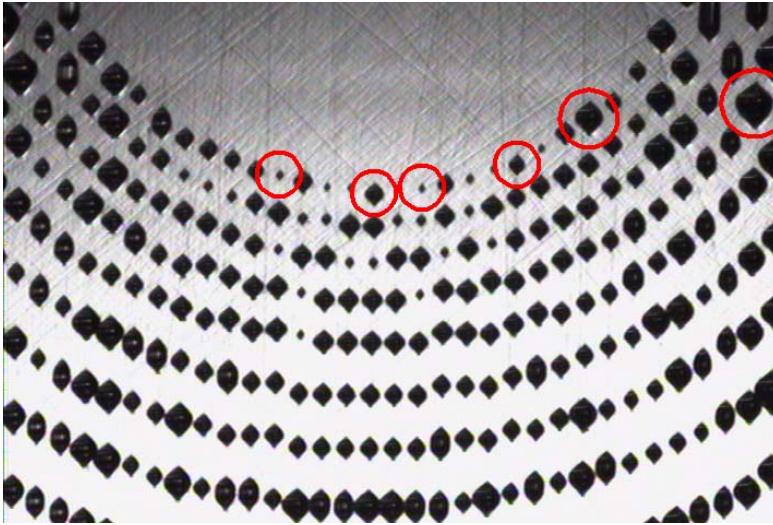
Example 1
1-High, 2-High, 3-High and 4-High

Defaults
1-High = 55
2-High = 55
3-High = 64
4-High = 77
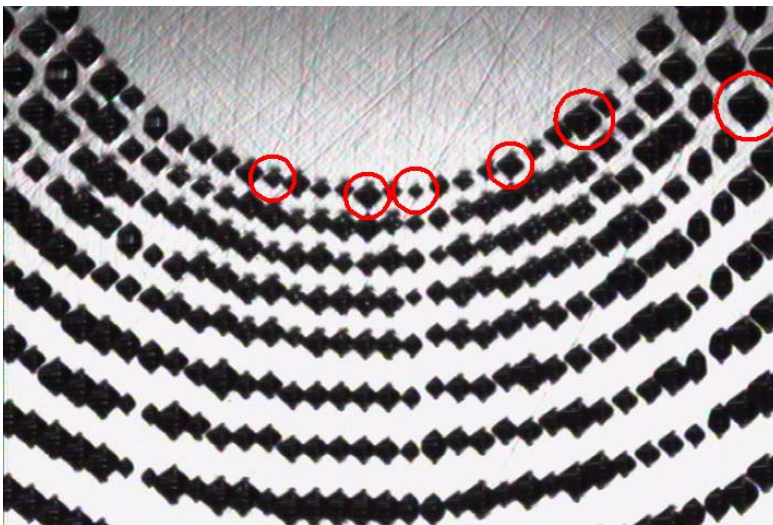
Example 2
1-High, 2-High, 3-High and 4-High

Boosted
1-High = 80
2-High = 68
3-High = 78
4-High = 81

Note how much larger the circled cells are in this picture compared to the Defaults picture above.
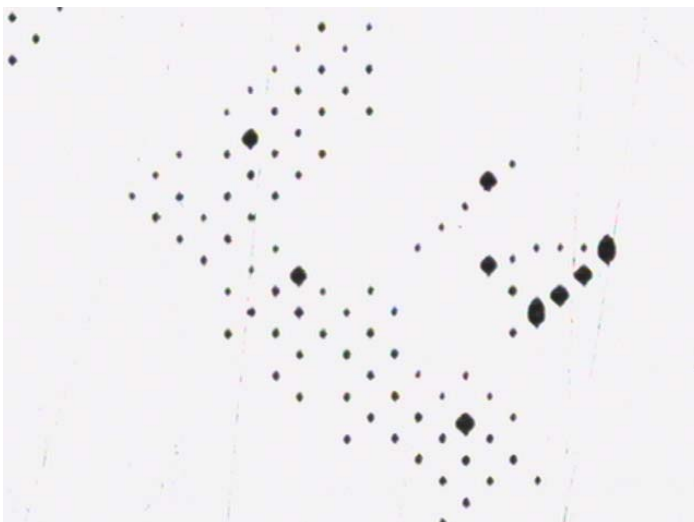
Example 3
 1-High, 2-High and 3-High

Defaults
1-High = 55
2-High = 55
3-High = 64
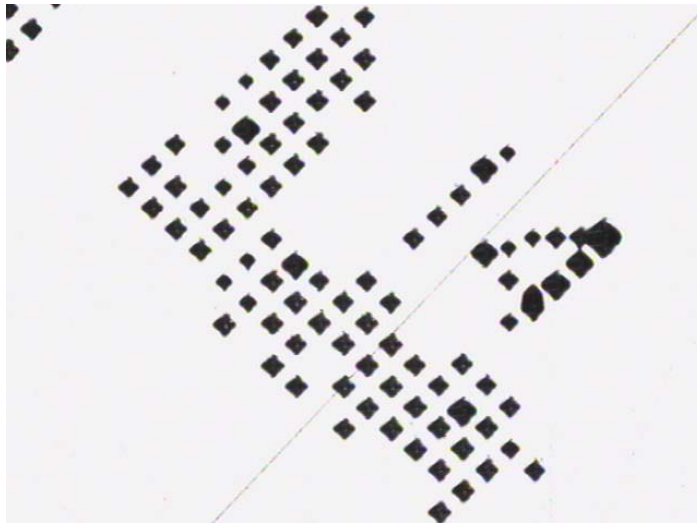
Example 4
1-High, 2-High and 3-High

Boosted
1-High = 80
2-High = 68
3-High = 78

Two High

Use Two-High to boost the size of pixels found in vertical groups of two. See the previous pictures in One-High. Default value is 55.

Three High

Use Three-High to boost the size of pixels found in vertical groups of three. See the previous pictures in One-High. Default value is 64.

Four High

Use Four-High to boost the size of pixels found in groups of four. Default value is 77.
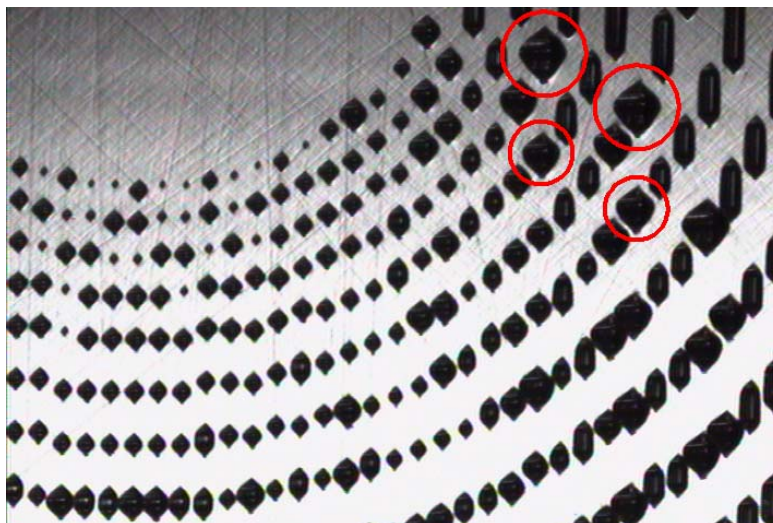
Example 1
4-High and 5-High

Defaults
4-High = 77
5-High = 86
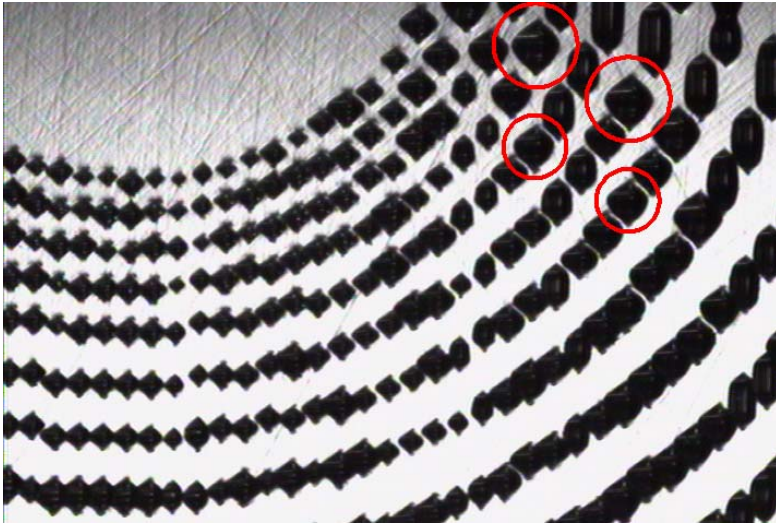
Example 2
4-High and 5-High

Boosted
4-High = **81**
5-High = **88**

Five High

Use Five-High to boost the size of pixels found in groups of five. See the previous pictures in Four-High. Default value is 86.

Horizontal Edge Depth

This is the number of pixels the edge cell extends into the image. The vertical distance the groove engraves increases as the number increases. A value less than 4 should not be used. Default is 5.

For a 3 x 8 diamond – The normal range is 4 to 6 pixels.

For a 5 x 12 diamond – The normal range is 6 to 8 pixels.

For a 7 x 16 diamond – The normal range is 8 to 10 pixels.
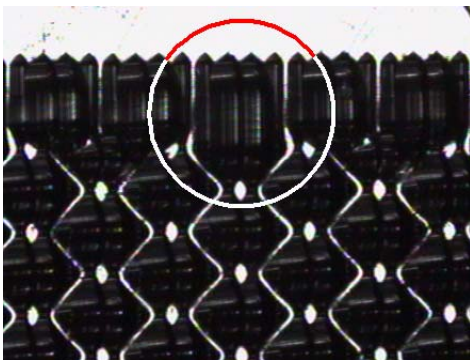
Example 1

Horizontal Edge Depth = 8

This is a 141 l/cm screen (3x8 cell).

Circle shows the depth (from the edge) of the grooves. This depth increases as the Horizontal Edge Depth increases.
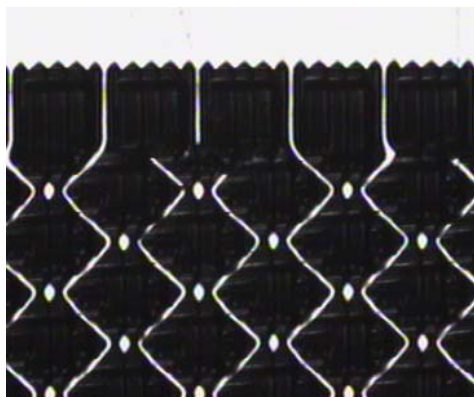
Example 2

Horizontal Edge Depth = 10

This is a 212 l/cm screen (5x12 cell).

Note: The Horizontal Edge Depth multiplied by 2 is the Max. Edge Cell Height.

Max Edge Cell Height

This is the overall height of the edge cell. The height is automatically calculated from the Horizontal Edge Depth and cannot be changed independently of the Horizontal Edge Depth.

Base Edge Width

Defines the base width of the edge cell. The minimum value for varies with the base cell size.

For a 3x8 cell, the working range is 3 to 5.

For a 5x12 cell, the working range is 3 to 7.

For a 7x16 cell, the working range is 5 to 9.

A value of 3 means that three strikes are used to create the cell:

> – a partial strike to create the left edge of the cell,
> – one deep strike forms the center of the cell,
> – a second partial strike to create the right edge of the cell.

As the width is increased, the number of deep strikes increases while the partial strikes remain the same. A setting of 4 creates two deep strikes, while a setting of 5 creates three deep strikes, and so on.

Note: The Base Edge Width is totally separate from the Deep Strikes setting on the Cell Definition page. The Base Edge Width sets the number of strikes for edge cells only. The Deep Strikes function sets the number of strikes for normal diamond cells falling in solid areas.
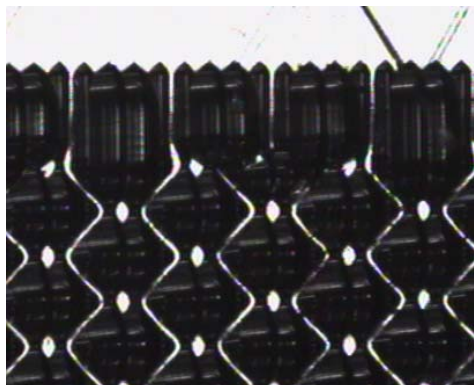
Example 1

Base Edge Width = 4
Deep Strikes = 2 (on Cell Definition page)

This is a 141 l/cm screen (3x8 cell).

Picture shows four strikes used to create the edge cell.
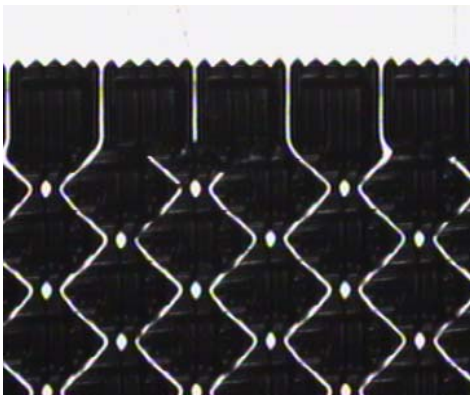
Example 2

Base Edge Width = 5
Deep Strikes = 2 (on Cell Definition page)

This is a 212 l/cm screen (5x12 cell).

This picture shows five strikes are used to create the edge cell.

Edge WidthX2

This controls the cell height at which the base width is doubled. Horizontal lines engraved with tranScribe have walls between cells to provide doctor blade support. Thick lines (tall vertically) require regular walls to support the blade and prevent blade slap during printing. As the lines grow thinner (shorter vertically), the possibility of blade slap decreases so you can increase the distance between cell walls. Setting the Edge Width X2 to a value of 8 means that cell heights of 8 or less automatically double the cell width. By doubling the base width, more deep strikes are engraved. This increases the ink volume and improves printing of the line.

Note: This value must be less than the Maximum Edge Cell Height.

For example: Max Edge Cell Height = 16
Base Edge Width = 4
Edge Width X2 = 6

In this example, anywhere the line thickness is 7 pixels or greater, tranScribe engraves edge cells with regularly spaced walls. When the line thickness falls to 6 or less, tranScribe automatically doubles the cell width from 4 to 8, adding four additional deep strikes to the cell width. This produces walls at twice the normal spacing. This also removes one set of partial cells, thus improving the look of the line.
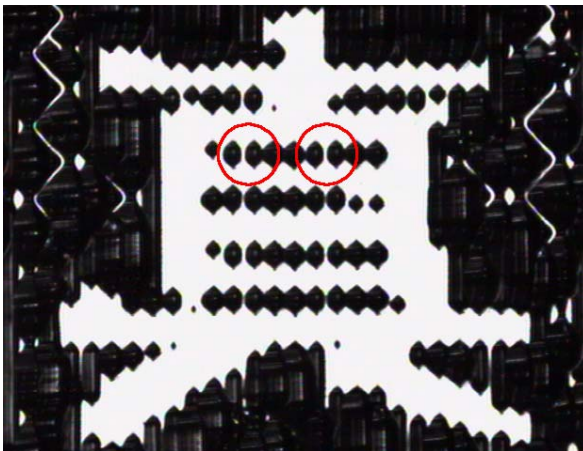
Example 1 of Edge Width X2 and X3

Defaults
Max Edge Cell Height = 4
Base Edge Width = 4
Edge Width X2 = Off
Edge Width X3 = Off

These two images clearly show the benefit of the X2 and X3 functions. The circles in both the negative and positive images show how walls are still added every fourth cell. Since the type face is extremely small, there is no benefit to having these walls as doctor blade support is not required.
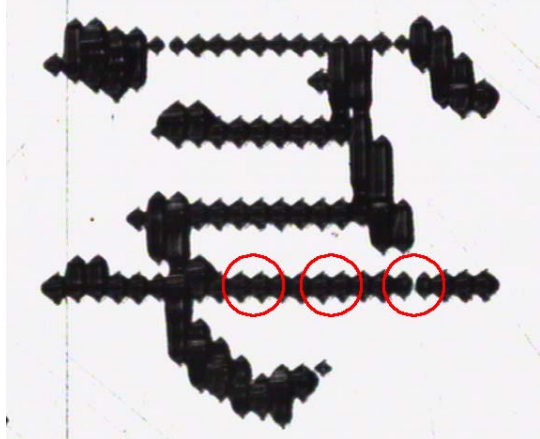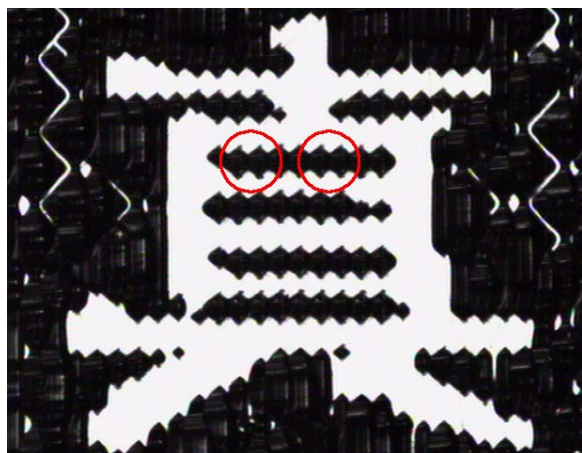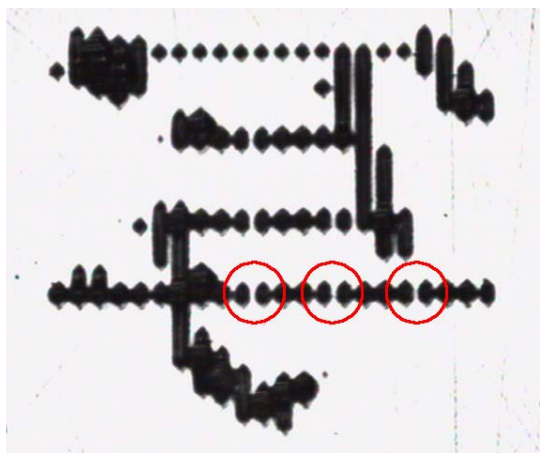
Example 2 of Edge Width X2 and X3

<u>Boosted</u>
Base Edge Width = 4
Edge Width X2 = 6
Edge Width X3 = 3

These images show the effect of adding a boost to the X2 and X3 functions. In these images, the walls that were occurring every fourth cell are gone. In the negative image, no walls at all are added to the short horizontal lines.

In the positive image, there is still a wall being added as a result of the X3 value being reached (in this case 12 rows). This wall could be completely removed if the No Walls function were used.

Edge WidthX3

Similar to Edge Width X2, Edge Width X3 triples the cell width of the tranScribe cell when the value is reached. This function is only good with extremely thin horizontal lines and should not be used on thick lines (tall vertically) as it can promote doctor blade slap during printing. See the previous pictures.

Note: This value must be less than the Edge Width X2.

For example: Max Edge Cell Height = 16
         Base Edge Width = 4
         Edge Width X2 = 6
         Edge Width X3 = 3

This example is very similar to the X2 example, anywhere the line thickness is 7 pixels or greater, tranScribe engraves edge cells with regularly spaced walls. When the line thickness falls to 6 pixels or less, tranScribe automatically doubles the cell width from 4 to 8. In this example however, when the line thickness narrows to 3 pixels or less, the cell width triples from 4 to 12. This now produces even fewer walls for smoother line printing with greater density.

No Walls

This function completely removes any walls from the engraved cells. The No Walls function is ideal for the thin curved lines and fine type. In both cases, the doctor blade does not require significant support inside the engraved areas. The walls on either side of the engraving are more than adequate for supporting the blade.

Note: This value must be less than the Edge Width X3.

For example: Max Edge Cell Height = 16
         Base Edge Width = 4
         Edge Width X2 = 6
         Edge Width X3 = 3
         No Walls = 2

This example is again very similar to those for X2 and X3, anywhere the line thickness is 9 pixels or greater, tranScribe engraves edge cells with regularly spaced walls. When the line thickness falls to 6 pixels or less, tranScribe automatically doubles the cell width from 4 to 8. When the line thickness narrows to 3 pixels or less, the cell width triples from 4 to 12. In areas where the line thickness falls to 2 pixels or less, all walls are removed from the engraving. This provides maximum cell width and the greatest printing resolution.

Pixel-Value

As on the Cell Definition page, there is a pixel editing area. This is used to edit the pixel values at the top and bottom of the edge cells. These entries help you to tailor an edge cell by enlarging or reducing the size of the first and last pixels creating the cell. Adjusting these values will vary the smoothness of horizontal edges and the amount of ink put down at the edges.

Top

Adjusts the first pixel of all top edge cells. Default value is 55.

Top + 1

Adjusts only the deep strike of all edge cells. Default value is 77.

Top +2

Adjusts only the deep strike of all edge cells. Default value is 96.

Middle

Adjusts the middle pixel of all edge cells. Default value is 100.

Bottom -2

Adjusts only the deep strike of all edge cells. Default value is 86.

Bottom -1

Adjusts only the deep strike of all edge cells. Default value is 64.

Bottom

The Bottom pixel (bottom cell vertically). Default value is 50.
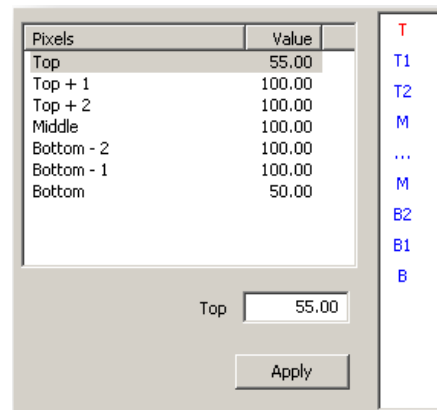
Vertical Edge

Use these settings to adjust the look of vertical edges on engraved images.
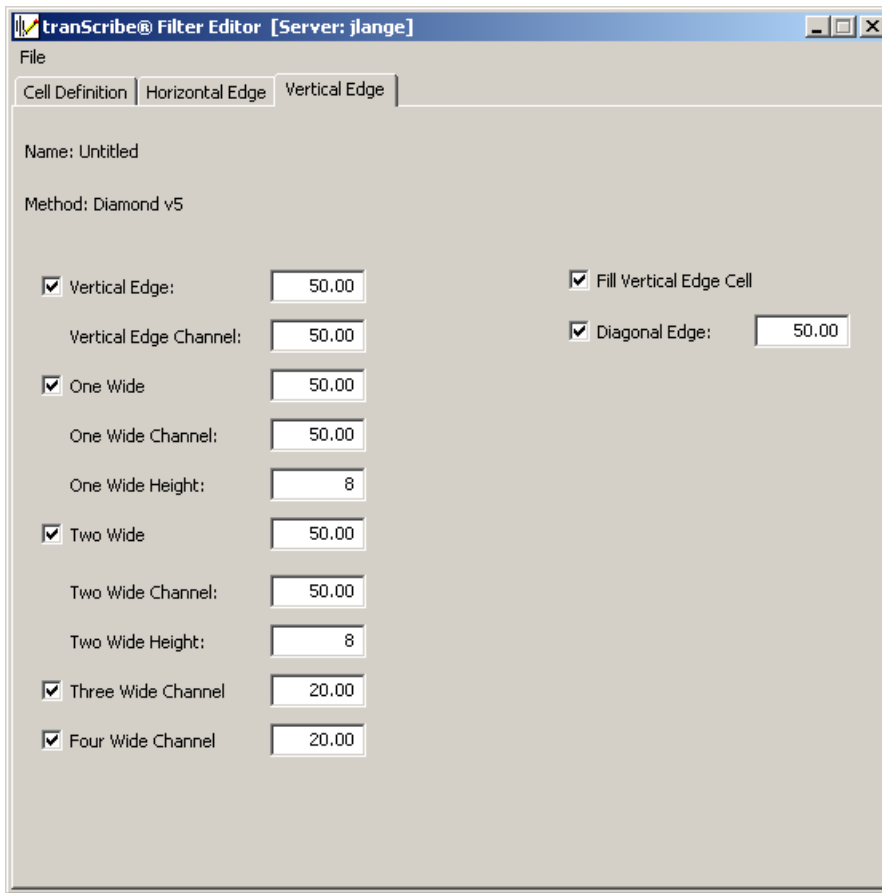
Vertical Edge

Boosts the vertical edges groove in image areas greater than 2 rows wide. See pictures below. Default value is 50.
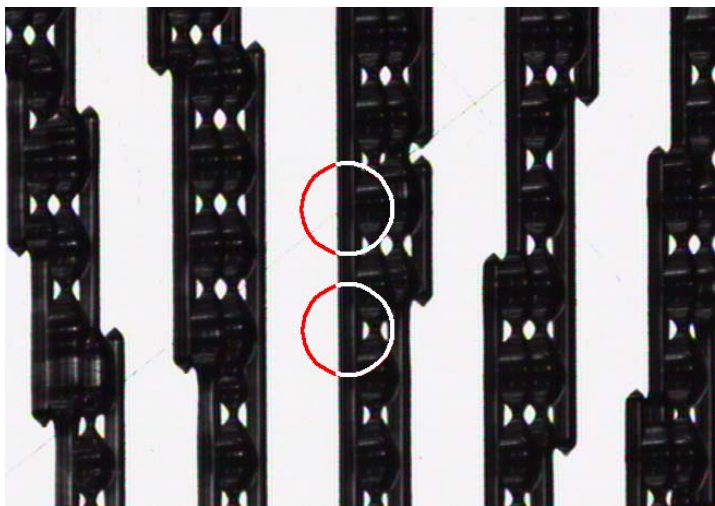
Example 1 of Vertical Edge and Vertical Edge Channel

<u>Default</u>
Vert. Edge = 50
Vert. Edge Channel = 50

Items to look at in this picture are the smooth edge grooves and the thickness of the edge grooves.
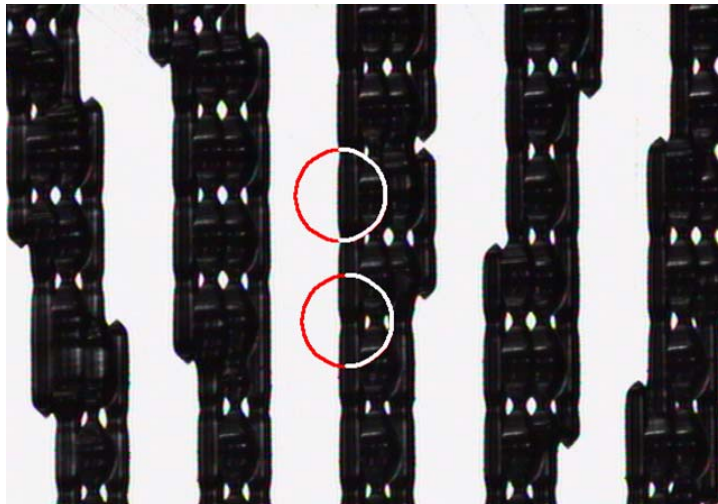
Example 2 of Vertical Edge and Vertical Edge Channel

<u>Boosted</u>
Vert. Edge = 55
Vert. Edge Channel = 47

The vertical edges have been boosted, making the edge grooves wider. The change to the Vertical Edge Channel causes a slight narrowing in the groove to create a choke point (channel).

Vertical Edge Channel

Adjusts the channel on vertical edge grooves in image areas greater than 2 rows wide. Normal use is decreasing this value to reduce the channel width and create a choke point for better ink laydown. Increasing this value increases the channel width and reduces the size of the post occurring between the channels. See pictures above. Default value is 50.

One Wide

Adjusts the width of a single vertical row of pixels. Use this to increase the size of the single row for better ink laydown. Increasing this value may require reducing the One Wide Channel value. Default value is 50.
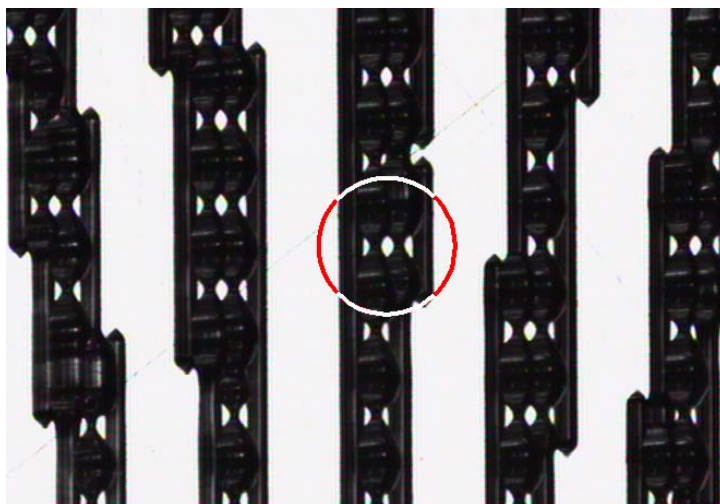
One Wide Channel

Adjusts the size of the channel in a single vertical row of pixels. Increasing the One Wide may require a reduction in the channel width to provide a choke point for better ink laydown. Default value is 50.

One Wide Height

Normal use is to reduce the height of a One Wide cell in conjunction with reducing the value of the One Wide Channel for better ink laydown. Default value is 8.

Two Wide

Adjusts the size of two-wide vertical images. Use this to increase the size of the two rows for better ink laydown. Increasing this value may require reducing the Two Wide Channel value. Default value is 50.
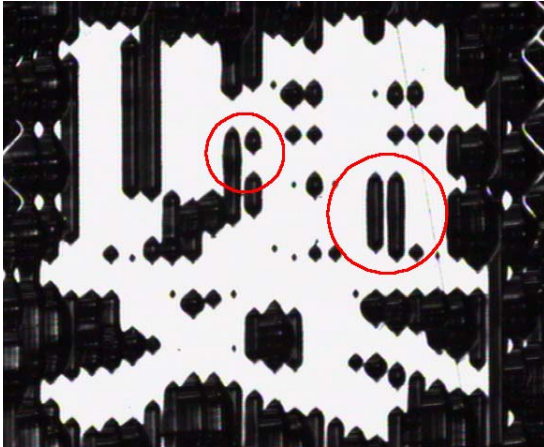
Example 1 of 2-Wide and 2-Wide Channel

<u>Default</u>
2-Wide = 50
2-Wide Channel = 50

Note the separation between the vertical lines in both the negative and positive images.
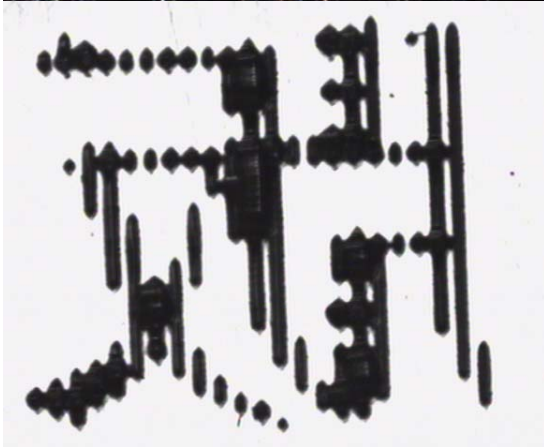
Example 2 of 2-Wide and 2-Wide Channel

<u>Boosted</u>
2-Wide = 58
2-Wide Channel = 44

In both the positive and negative images, note how the vertical lines are much wider, a result of boosting the 2-Wide function. You can also see how reducing the 2-Wide Channel has increased the channel width and created a 'choke point' through the lines.
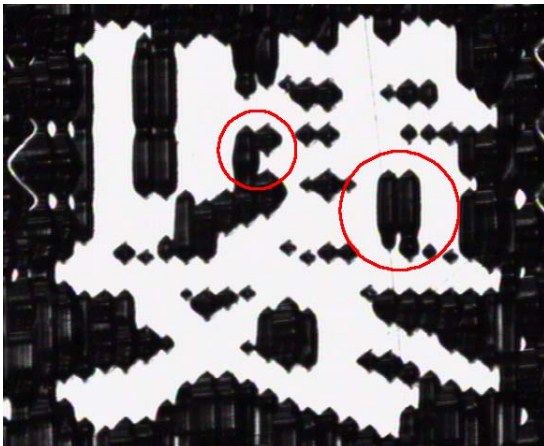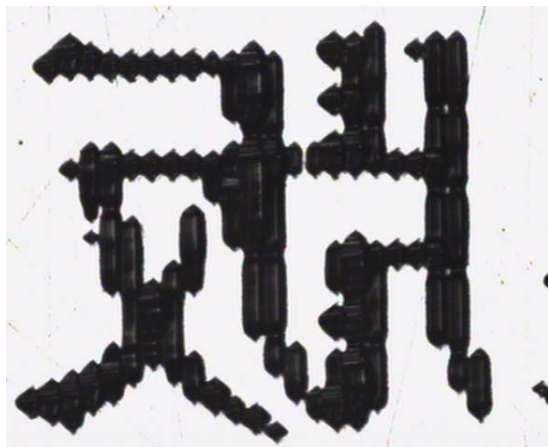
Two Wide Channel

Adjusts the size of the channels in a two-wide vertical image. Increasing the Two Wide may require a reduction in the channel width to provide a choke point for better ink laydown. Default value 50.

Two Wide Height

Normal use is to reduce the height of a Two Wide cell in conjunction with reducing the value of the Two Wide Channel for better ink laydown. Default value 8.

Three Wide Channel

Adjusts the size of channels in a three-wide vertical image. This function is normally used to increase the channel size to reduce the post area occuring between the channels. Changes may be required to provide a choke point for better ink laydown. Default value is 31.

Example 1 of Three-Wide Channel and Four-Wide Channel

<u>Default</u>
Three-Wide Channel = 31
Four-Wide Channel = 31

Notice the size of the posts occurring between the channels.
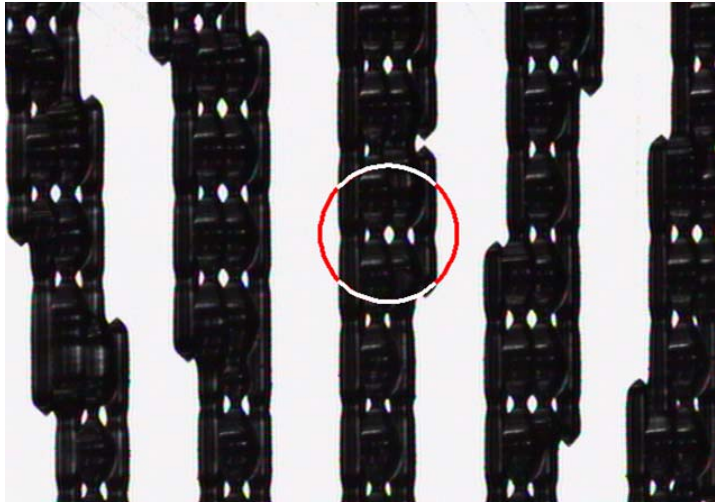
Example 2 of Three-Wide Channel and Four-Wide Channel

Boosted
Three-Wide Channel = 34
Four-Wide Channel = 34

The Three-Wide and Four-Wide Channels have been boosted, increasing the size of the channels between cells and decreasing the size of the posts between channels.

Four Wide Channel

Adjusts the size of channels in a four-wide vertical image. This function is normally used to increase the channel size to reduce the post area occurring between the channels. Changes may be required to provide a choke point for better ink laydown. See pictures with Three Wide Channel. Default value is 31.

Fill Vertical Edge Cell

This is used to reduce the depth of the deep strike when engraving vertical lines.

In the picture to the right, the center stripe has areas where very large cells are engraved with smaller cells beside. This condition may result in a difference in densities across the line width.

Turning this OFF will reduce the depth of the large two-wide cells running down the right edge to balance print density across the line.

Default is ON. Select the checkbox to clear the checkbox and turn this OFF.
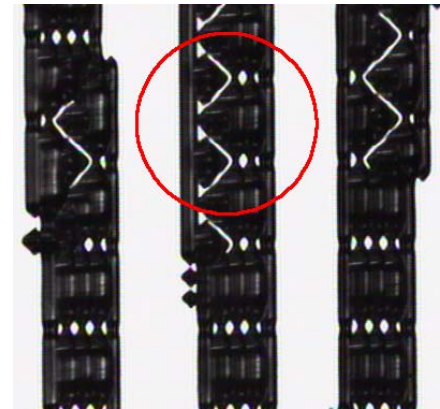
Diagonal Edge

This sets the boost for inner corner pixels along diagonal edges. As shown in the following graphic, only those pixels with white at one corner are boosted. Default value is 50.

Inner corner pixels

Engraving direction
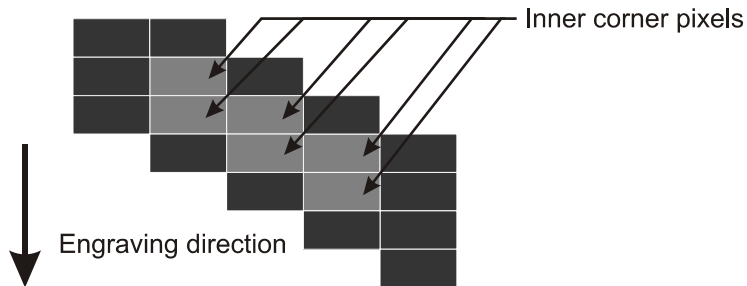
Example 1 of Diagonal Edge

<u>Default</u>
Diagonal Edge = 50

Example 2 of Diagonal Edge

<u>Boosted</u>
Diagonal Edge = 60

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