oXYgen Smart Tips

Producing Quality Scans

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oXYgen Smart Tips

oXYgen Smart Tips are designed to inform and aid you in using oXYgen software. oXYgen Smart Tips address specific tasks in your workflow. Each oXYgenSmart Tip points out straightforward ways for you to produce the highest quality results with Creo scanners and oXYgen software.

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Introduction to this oXYgen Smart Tip

This oXYgen Smart Tip describes key features, options, and tools in oXYgen Scan software that can enhance your scanning workflow and increase both productivity and project possibilities. Intuitive and workflow-oriented, oXYgen Scan, together with Creo scanners, enables you to produce top quality scans consistently for every project.

Overview

The following are just some of the key features, options, and tools available in oXYgen Scan software, that can significantly contribute to the production of quality scans:

- End Points
- Negative End Points
- Toning Curve
- Automatic Image Analysis
- Color Correction: Global and Selective
- Sharpness
- Gradation
- Luminance
- Saturation
- Gray Control and Input Gray Levels
- SmartSets™

Note: The features, options, and tools described in this oXYgen Smart Tip are available as of oXYgen Scan version 2.4.2 (for the iQsmart family of scanners) and as of version 2.4.1 (for the EverSmart family of scanners).

For details about oXYgen Scan software, including hands-on scanning exercises, see the *oXYgen Scan Learning Guide* (749-00018A), Web-based training at www.creo.com/global/products/scanning_systems/color_scanners/accessories_tools, the *oXYgen Scanning Application User Guide* (399Z1P555C) and the user guide addendum documentation.

Originals

You can scan originals that vary in size, material, thickness and format. Scannable original types include:

- Transparent: Framed or unframed
- Reflective: To scan a three-dimensional object, leave the top cover open.
- Positive
- Negative
- Color
- Black-and-white
- Printed
- Line-art
- Screened

Workflows

The primary workflows to be aware of are the RGB, CMYK, and SOOM workflows. Into these workflows you can incorporate input and output profiles, soft proofing, output simulations, and ICC (International Color Consortium) color management standards.

For detailed information about digital archiving workflows, including RGB and SOOM workflows, see *oXYgen Smart Tips: Digital Archiving with Creo Scanners*.

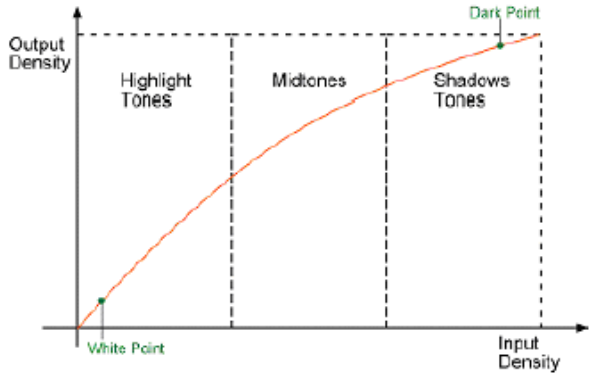
Using End Points to Adjust Image Tone

In the End Points dialog box, you can control tonal density in an image. The tonal range and density of an original image is usually greater than that of a printed image because of physical limitations in the printing processes. To compensate for these differences, the scanner compresses the original's tonal range in a way that loss of detail is minimized in the scan file. The scanner compresses the shadows more than the highlights because the human eye is less sensitive to tonal changes in shadow areas.

End points are used to determine suitable image adjustments based on the White Point (the whitest point in the image) and the Dark Point (the darkest point in an image). During Preview, the scanner analyses the image and automatically determines these points. You can edit these automatically determined White and Dark points.

Toning Curve

The toning curve (on the Toning tab) is a comparison of density values in the original image (input density) to density values in the scan (output density). The specific tone range of an image is represented by the toning curve that extends from the highest white point value to the lowest dark point value.

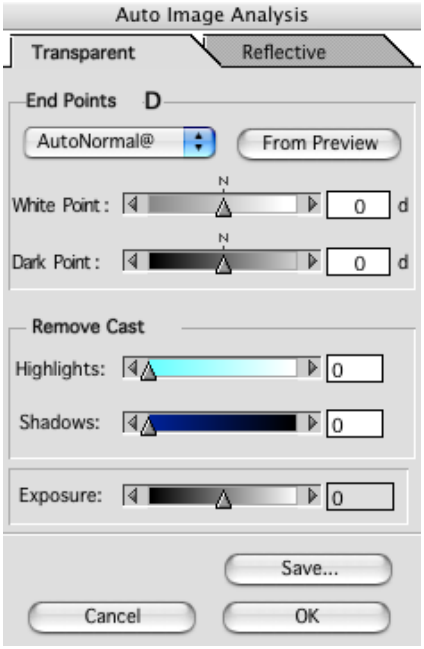


You can save tone adjustments together with the selected White Point and Dark Point in an End Points table. You can make toning adjustments by adjusting R, G, and B values separately or all RGB values at once. The toning curve is useful for many types of adjustments, including opening up shadow areas and changing color brightness.

Note: It is recommended that you make only a minor change to the position of a point on the toning curve. Drastic toning changes may damage the image file.

Automatically Adjusting and Resetting the Toning Curve

If you make changes to the toning curve that you do not want to use, you can reset the separation curves to their most previous positions, to a 45 degree angle, or you can apply toning based on the results of automatic image analysis by using the **Auto All** function and creating an Automatic End Points table.



Examples of End Point Adjustments

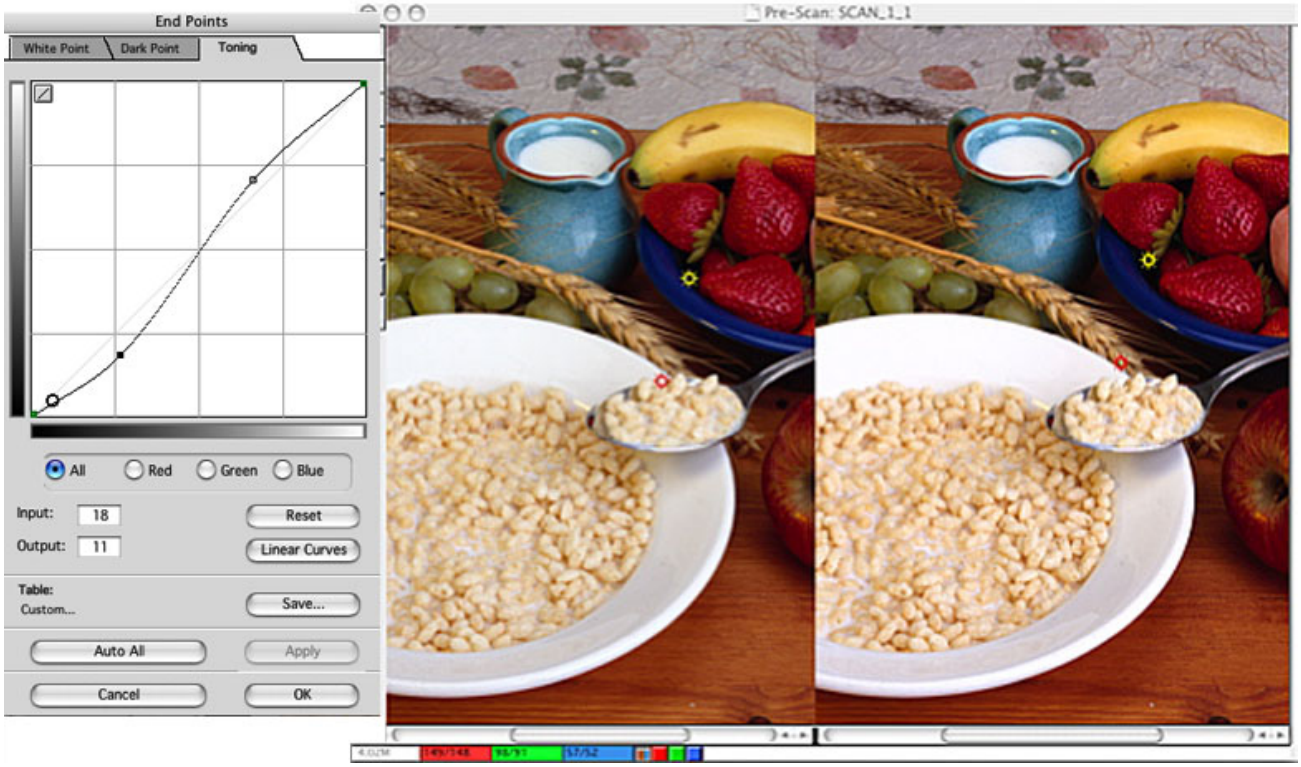


Figure 1: Toning tab of End Points dialog box; Left split screen: Before adjustments; Right split screen: After toning curve adjustments

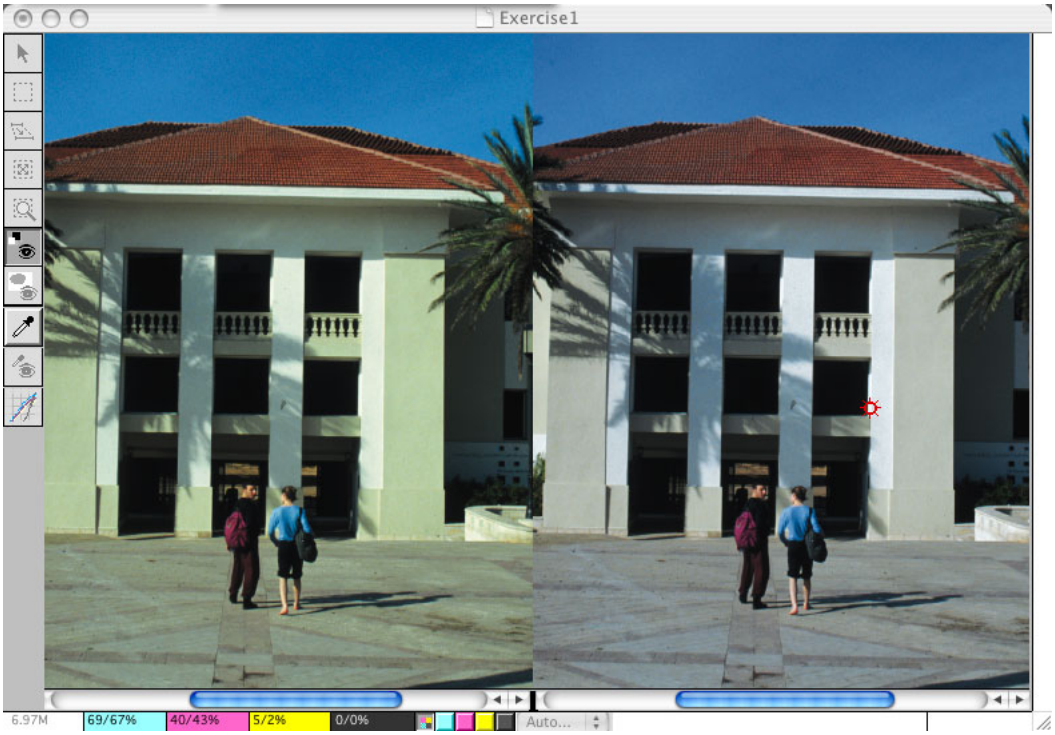


Figure 2: Left split screen: Before adjustments; Right split screen: After setting white point

Figure 3: Left split screen: Before adjustments; Right split screen: After setting neutral point

Figure 4: Left split screen: Before adjustments; Right split screen: After setting exposure to adjust depth

Figure 5: Left split screen: Before adjustments; Right split screen: Details in dark areas revealed by adjusting exposure

Adjusting Negative End Points

Based on a similar principal as adjustment to the end points of a positive original, the Negative End Points dialog box provides you with tools to adjust the end points of a negative image.

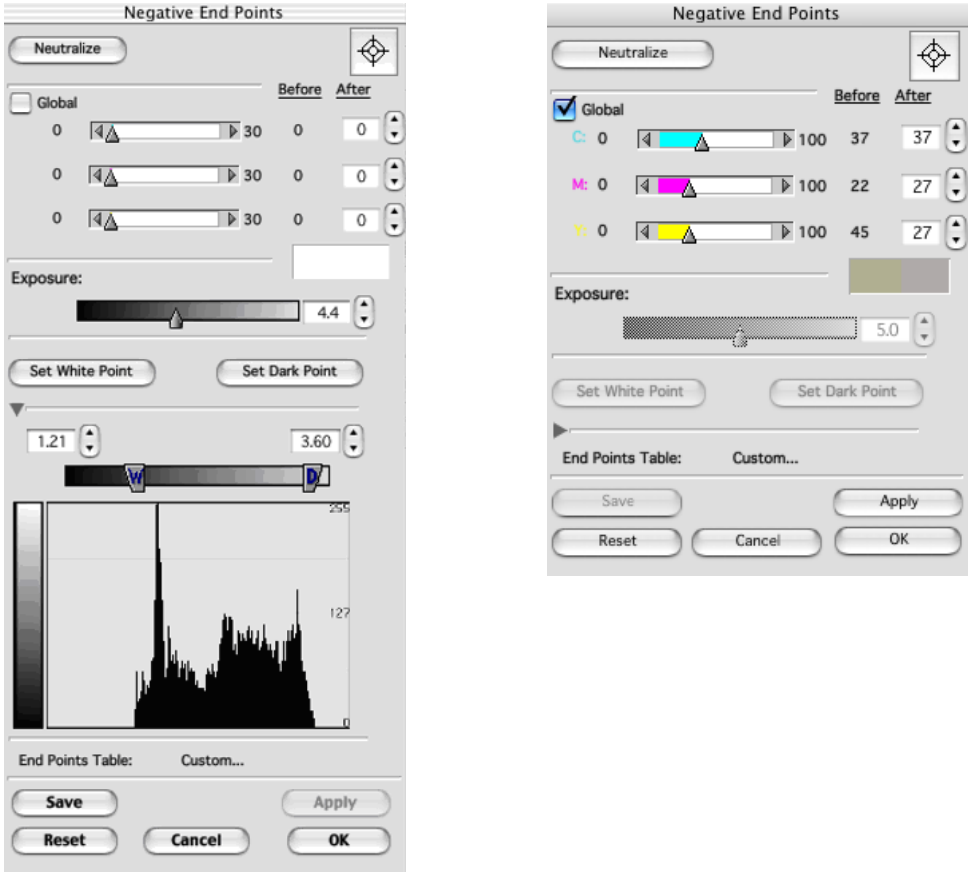


Figure 6: Left: Negative End Points dialog box (extended); Right: Negative End Points dialog box with Global option selected

Quick Balance Tool

The Quick Balance tool enables you to change negative color balance and exposure, quickly, and conveniently. You can increase productivity with this tool, especially when you work with a batch of negatives. When the Preview window opens, the Quick Balance tool automatically opens.

Working in RGB Mode

RGB mode preserves the color space of your scanner and enables you to view an accurate representation of a scanned original on the monitor. Use this an RGB workflow when the intended output may be on different types of RGB devices.

To use RGB mode:

- In the Setup dialog box, from the **Input profile** list, select **scanner profile** and from the **Output profile** list, select **RGB printer**.

Output Simulation

When you work in an RGB mode, the **Output Simulation** tool is available at the bottom of the Image Display window.

To use Output Simulation:

1. On the lower bar of the Image Display window, select the **Output Simulation** check box.
2. From the **Output Profiles** list, select an output profile.
3. From the **Output Device** list, select the output device you intend to use.

   The preview image appears as it would if it were printed on the selected output device.

Working in CMYK Mode

In a CMYK mode, you can scan an image to the CMYK color space of a CMYK printer. You can then view an accurate representation of the printed image.

To use CMYK mode:

- In the Setup dialog box, from the **Input profile** list, select **scanner profile** and from the **Output profile** list, select **CMYK printer**.

Using ICC Color Management

Using a complete color management workflow assures output predictability with highly accurate and consistent color even with different originals and output devices including RGB monitors, and CYMK printers and proofers. You can display a soft proof on your screen for a good color representation of how an image will look when printed. A device link profile maps the color transformation from the scanner gamut to the output device gamut based on the selected rendering intent. With oXYgen Scan's comprehensive editing tools, you can fine-tune the device link and as well as precisely set the gray balance separation, adjust UCR (undercolor removal) and GCR (gray component replacement) levels, and change color tonal balance. ICC color management based workflows are flexible and you can suit them to your scanning needs.

See the Web-based training presentation *ICC Color Management* at www.creo.com/global/products/scanning_systems/color_scanners/accessories_tools.

Controlling Gray Balance

For consistent, high-quality output, the gray balance setting of the color profile and of the device link profile must match the gray balance setting of the output device you are using. For CMYK images, you can control gray balance settings in both the Gray Control and Input Gray Levels dialog boxes. The Gray Control dialog box enables you to adjust gray balance within 1/4-tones separately for each separation. For RGB images, use the Input Gray Levels dialog box. Both dialog boxes are accessible from the **Image** menu.

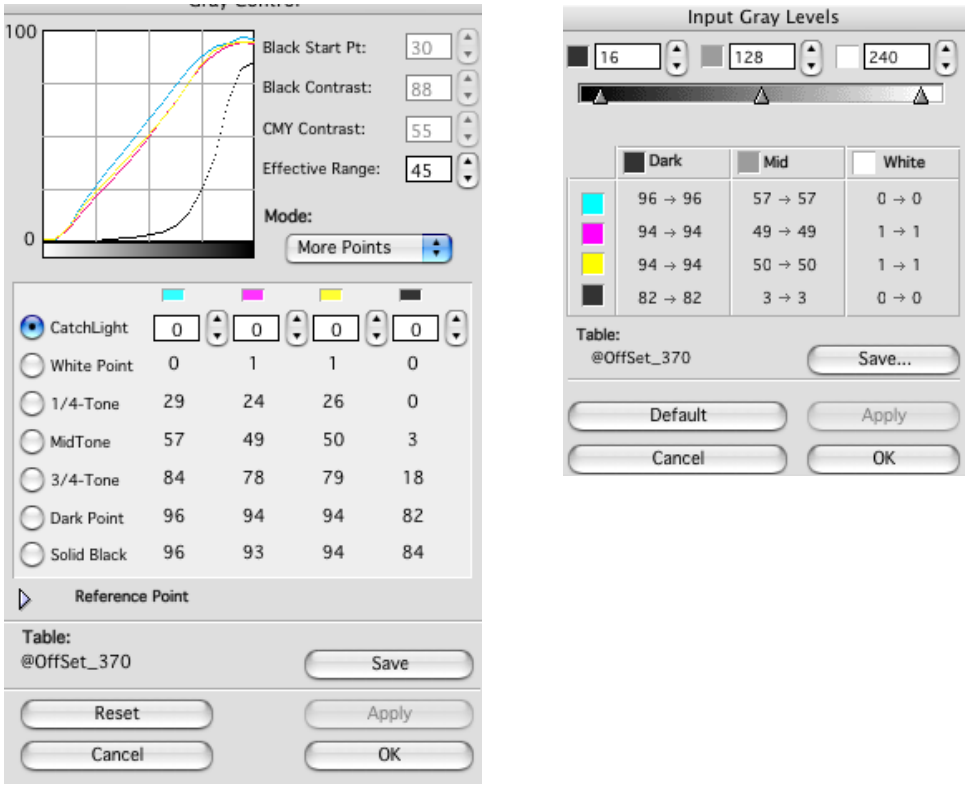
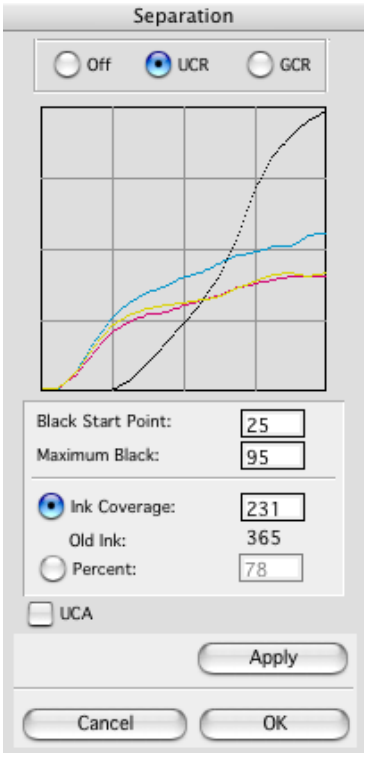


Figure 7: Left: Gray Control dialog box (for CMYK only); Right: Input Gray Levels dialog box for RGB or CMYK

Separation Setup

The Separation dialog box includes **UCR** and **GCR** options.



- **UCR**: In order to prevent ink density that is too great, the black that results from combining cyan, magenta, and yellow inks, is actually replaced by black ink.
- **GCR**: When C,M, and Y separations are printed, the two most dominant of the colors determine the basic color hue of the printed image (for example, a red hue or blue hue) of the output. Certain CMY value-combinations produce gray. To present this, black (K) is added to the CMY separations and areas which would otherwise be printed as gray, are printed using black halftones.

When you select the **UCR** or **GCR** option and then make adjustments to the values, you can see the results both on the Separation curve in the Separation dialog box and also in the Image Display window where you can compare the image before and after adjustments.

Advantages of Using UCR and GCR

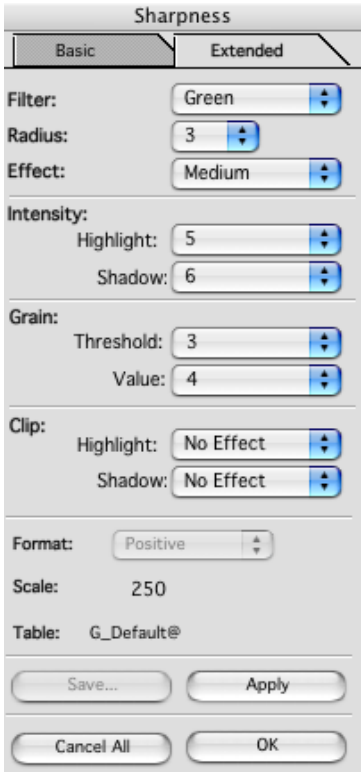
- Improved color saturation
- Detail in **K** (black) separation for sharper reproduction
- Vivid colors on various paper types (including poor quality paper)
- Reduced amount of costly CMY inks used for print
- Reduced drying and make-ready press time
- Fewer ink-trap problems
- Higher neutral-tone (gray) stability

Applying Sharpness

Figure 8: Left: Before adjustment; Right: After Sharpness adjustments

Sharpening affects the borders between adjoining areas of differing brightness. During scanning and printing, image sharpness decreases. The Sharpness function compensates for this decrease. The scanner increases image sharpness by comparing the light intensity of each pixel to the light intensity of its surrounding area. After sharpening, a thin outline (contour) composed of a light and dark strip emphasizes the border between lighter and darker areas.

Sharpness is applied automatically by the scanner, and then you can adjust the settings as you require in the Sharpness dialog box. As you make changes, you can view your results as compared to the original image, in the Image Display window.



Filter

The filter you select defines the color channel that is used as a sharpness reference. For example, in single-color filters, the R, G, and B channels are sharpened according to the brightness variation of the selected channel. For this reason, the color channels are not sharpened to the same degree.

Figure 9: Left: Red filter applied; Center: Green filter applied; Right: Blue filter applied

Radius

The **Radius** value is the thickness of the contour. The greater the **Radius** value, the thicker the contour.

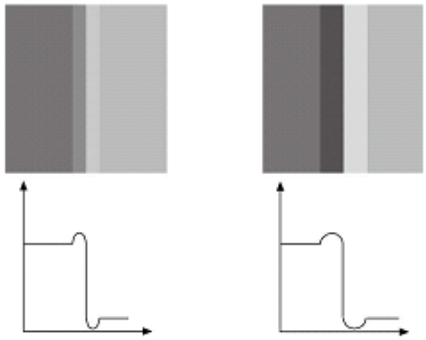


Figure 10: Left: Small radius; Large radius

Effect

With **Effect**, you can control the smoothness or harshness of a contour.

Intensity

The **Intensity** value is the intensity of a contour in relation to the intensity of the background. In the Sharpness dialog box, you can set **Intensity** values separately for highlights and shadows.

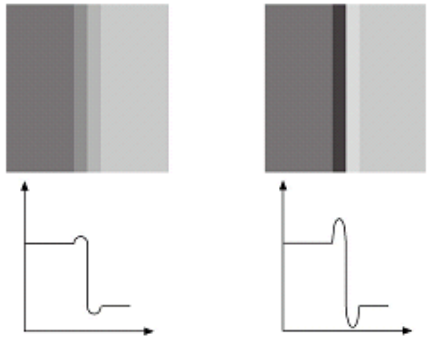


Figure 11: Left: Low intensity; Right: High intensity

Grain

Grain, also known as noise, is visible emulsion particles. You may see grain at certain enlargement sizes. The **Grain** function trims the peaks of grain in the image, thus reducing grain sharpness. Since the grain is then less visible than the rest of the image, the image appears smoother and more even.

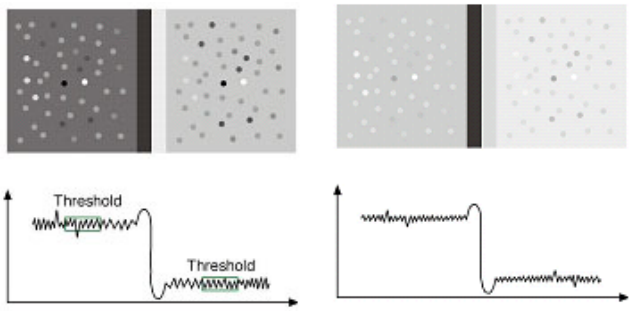


Figure 12: Left: No grain reduction; Right: Grain reduction applied

Clip

The **Clip** function blurs the contour that is sometimes produced when two colors, such as blue and brown, are used together with a certain filter.

Oil Mounting Station

The Oil Mounting Station ™, the first offline mounting station designed especially for flatbed scanners, enhances image quality. With the Oil Mounting Station, you bath the film in a layer of scanning oil. It is recommended that you use the Oil Mounting Station if an original is scratched or if you intend to enlarge an image to more than 800% of its original size. Benefits of using the Oil Mounting Station include:

- Scratches are concealed.
- The need for post-scan retouching is greatly reduced, thus saving time and reducing costs.
- Grain is smoothed slightly.
- Dust is minimized.

See the Web-based training presentation *Oil Mounting Station* at www.creo.com/global/products/scanning_systems/color_scanners/accessories_tools.