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Welcome to the EverSmart Scanning Application Tutorial

Since 1986, with the introduction of the Smart scanner, CreoScitex has lead the market with innovative scanning technologies and color flatbed CCD scanners for the professional graphic arts market. The introduction of the EverSmart scanners marked a breakthrough in high quality color scanning.

Until then, scanning was a complicated part of the prepress workflow. Scanner operators worked with drum scanners and had to know exact CMYK values in order to produce high quality scans.

The CreoScitex Smart flatbed scanner, changed the traditional workflow completely. Previously, drum scanners required manual settings using a loupe. Today, the EverSmart scanner offers you a preview of the scanned image based on the scan parameters.

CreoScitex innovative scanners simplified the prepress workflow, and made the creation of high quality scans far less complicated. The EverSmart scanner is now the standard in the flatbed scanning industry.

However, producing high quality scans still requires a good understanding of the existing tools and how to use them. In some cases, the scanner operator is requested to improve the original image. When scanning a landscape, for example, there may be a need to create a sunnier day and a bluer sky than what is depicted in the original image.

This tutorial will enhance your scanning knowledge and boost productivity in your working environment.

The exercises in this tutorial are targeted at scanner operators at beginner level, but experienced operators can also benefit from the exercises.

We strongly recommend you to practice with the following web-based modules before using this tutorial: **EverSmart oXYgen** and **EverSmart ICC Workflows**. You can access these modules through our Web Based Training page in the [eCentral](#).

Upon completion of this tutorial you will be able to:

- Remove a cast using the White Point function.
- Remove a cast using the Neutralize function.
- Remove a cast from negative images using the Negative Balance function.
- Increase details in specific areas of the image using the Exposure function.
- Manipulate sharpness to enhance negative and positive images scanned at different scales.
- Edit colors using the Color Correction and the LS Curves functions.

At the end of this tutorial there is background information and tips that will help you acquire a better understanding of scanner functions. You should refer to it when looking for more information on: [Removing Cast](#), [Exposure](#), [Sharpness](#) and [DT files](#).

Getting Started

This tutorial was designed to be opened on the screen together with the EverSmart Tutorial Application while performing the exercises:

1. First start the EverSmart Tutorial Application (see *Readme First* for instructions)
2. Open the PDF file with this tutorial.
3. Resize the PDF file to a narrow window beside the application. The window shouldn't take more than one third of the screen to allow you easier access to all windows and dialog boxes in the scanning application.

Note: When you click a link in the PDF, use **<Command** **←** **>** to go back.

We recommend you to set the screen resolution to 1152X870 pixels in a 19" monitor (or bigger).

Before you start, make sure that your monitor is properly calibrated. You can use the calibration tools provided with your Macintosh Operation System to do that. We recommend you to use a spectrophotometer, such as Gretag or X-Rite for a better calibration. For more information on these spectrophotometers, refer to the appropriate manufacturer's documentation. For more information on ICC workflow and its importance, please go to the **EverSmart ICC Workflows** Web Based Training module in the [eCentral](#).

The recommended workflow, described in each exercise, contains the sequence of functions we used to achieve the desired results. You may find alternative workflows that also give satisfactory results.

You may also want to output proofs of the images and compare them to the proofs of your scans. This is especially important for the Sharpness exercises.

Make sure your proofer and scanner are calibrated. The proofer should be calibrated to Euro Offset standard.

In all the exercises, you will be requested to select **DVL_Sup_Euro** as your Device Link profile. This device link profile connects the input profile of the Supreme scanner to the output profile of the Euro offset standard, with adjustments for the scanner. The Device Link profile allows the image in the scanner to reflect the image in the output. If you use a different profile, the way the image looks will be affected. Bear that in mind when making proofs.

The installer will place the **DVL_Sup_Euro** device link in the ColorSync folder, which is located in the System folder of your computer.

Practice Files

To perform the exercises in this tutorial, you will use images provided in the CDs. These demo scans are known as [DT files](#). They are 16 bit RGB files that contain all the data captured by the scanner's CCD. Scanning them is the same as scanning the analog original placed on the flatbed of the scanner.

Make sure you copy the images to a folder in your hard disk before starting the tutorial.

Exercises

In the following exercises you will practice using the **End Points**, **Negative Balance**, **Sharpness**, **Color Correction** and **LS Curves** features when working with positive and negative transparencies.

End Points

The End Points function is one of the scanner functions used for tonal changes. We strongly recommend that you first use the **End Points** function for general changes, and only then, make other modifications to the image.

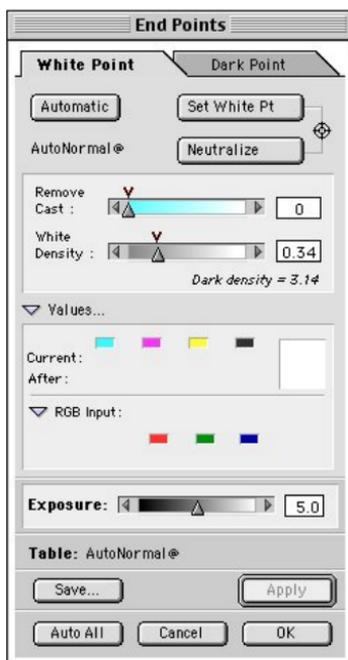
Exercise 1 – The Set White Point Option

In this exercise you will use the **Set White Point** option in the **End Points** window to remove the cast of an image without affecting its sunny character. This workflow is recommended when the image has a true White Point.



1. Open file **EXERCISE 1**.
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Positive**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - Device Link: **DVL_Sup_Euro**
3. Keep the default **Crop**.
4. Click **Apply**.

5. Open the **End Points** window.



- Look at the image. Note that the wall has a strong greenish cast.
- Use the floating densitometer to check the values in the white wall. These values should be neutral.

6. Click the **Set White Pt** button.

7. Click the red circle.

- The red circle shows the point that the scanner chose as the **Brightest Point**. This part of the wall should be white, not green.

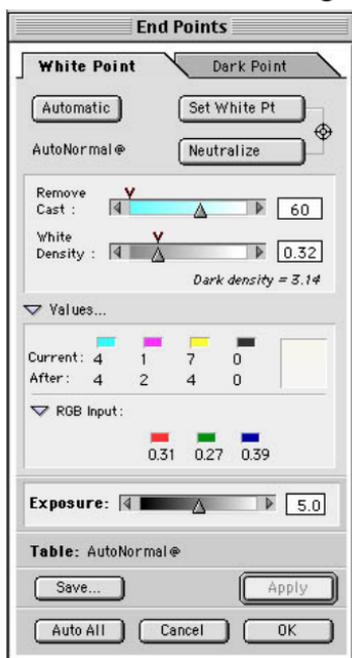
Tip: Press the SHIFT key down while clicking the mouse to find the whitest point within the red circle.

Note: The color box displays a preview of how the selected will change.

8. Click **Apply**.

- The cast was removed, but the neutralizing effect of the **Set White Pt** caused the colors in the image to look dull. It looks like a cloudy day. You can correct this by using the **Remove Cast** option. This option will help you add sunshine to the image.

- Use the **Split Screen** option to compare your changes to the original image.
9. Adjust the **Remove Cast** value until you reach the effect you desire.
- We recommend you try a few values and check how they affect the image. For example:
 - a. Set the **Remove Cast** value to 30.
 - b. Click **Apply** to view the result.
 - c. Set the **Remove Cast** value to 60.
 - d. Click **Apply**.
 - A value of 60 should give you good results.



10. Click **Apply**.
- Always check the **White Point** and the **Dark Point** after making changes. Make sure their values are acceptable.
11. After you reach the desired results, you may click **Save** to create a new **End Points** table.
12. Click **OK** to close the **End Points** window.



13. Scan the image.

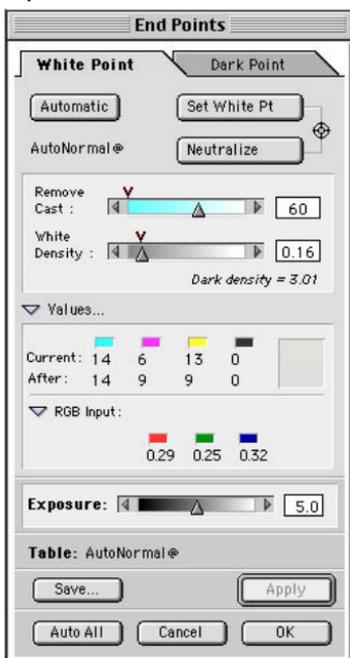
Exercise 2 – The Neutralize Option

In this exercise we will use the **Neutralize** option in the **End Points** window to remove the cast of an image without affecting its sunny character. This workflow is recommended when the image does NOT have a true White Point.



1. Open file **EXERCISE 2**.
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Positive**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - ICC Profiles:
 - Device Link: DVL_Sup_Euro**
3. Keep the default **Crop**.
4. Click **Apply**.

5. Open the **End Points** window.



- Look at the image. Note that it has a strong yellowish cast.
- Use the floating densitometer to check the CMYK values.

6. Click the **Neutralize** button.

7. Click an area of the image that should have a neutral gray color. For example, the stone path ([see image above](#)).

- The color box displays a preview of how the color you selected will change. Note that the Cyan and Yellow values are very high in comparison to the Magenta values. These values are causing the cast.
- Use the **Split Screen** option to compare your changes to the original image.

8. Click **Apply**.

- The cast was removed, but the whole image looks too “cold.” The colors are dull. They do not reflect the warmth of a sunny day.
- In the color box, note that the Cyan value is still a little too high. You can correct this by using the **Remove Cast** option.

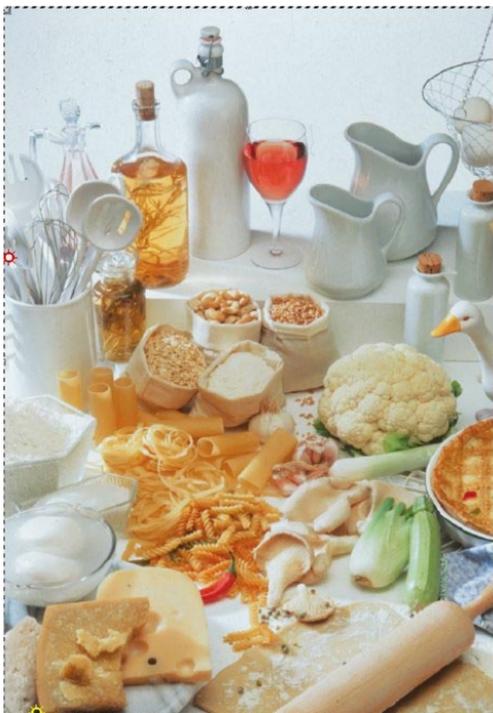
9. Adjust the **Remove Cast** value until you reach the effect you desire.
 - We recommend you try a few values and check how they affect the image. For example:
 - a. Start by setting the **Remove Cast** to 50.
 - b. Click **Apply** to view the result.
 - Values between 45 and 55 should give good results for this image.
10. Click **Apply**.
 - Compare the images in the split screen. The yellow cast was removed. Note that the sky is blue and the greens are as vivid as you would expect on a sunny day.
11. After you reach the desired results, you may click **Save** to create a new **End Points** table.
12. Click **OK** to close the **End Points** window.



13. **Scan** the image.

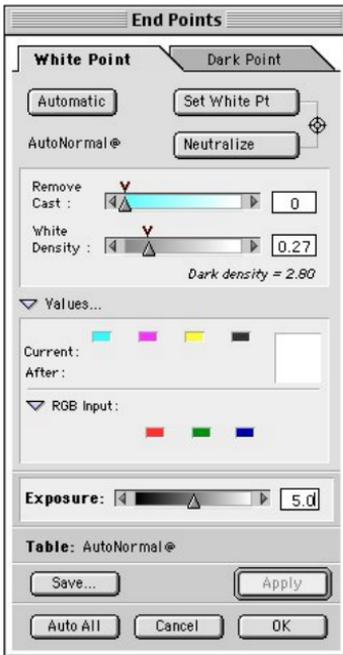
Exercise 3 – Decreasing Exposure

The **Exposure** feature in the **End Points** window affects mainly the midtones of the image. It doesn't affect the White and Black points ([see diagram](#)). In this exercise you will increase the depth of the image using the **Exposure** feature.



1. Open file **EXERCISE 3**.
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Positive**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - Device Link: **DVL_Sup_Euro**
3. Keep the default **Crop**.
4. Click **Apply**.

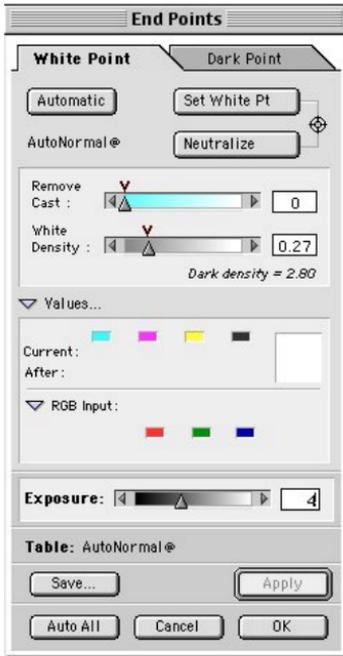
5. Open the **End Points** window.



- Look at the image. The colors are a little flat. There isn't enough depth.
- Use the floating densitometer to check the color values in several areas of the image, especially in the midtones.

6. Decrease the **Exposure** value.

- We recommend you try a few values and check how your changes affect the image. For example:
 - a. Decrease the exposure by one point.
 - b. Click **Apply**.
- An **Exposure** value of 4 should properly adjust the image's midtones.
- Use the **Split Screen** option to compare the image before and after your changes.



7. Click **Apply**.
 - Use the floating densitometer to check the values of the image and make sure that there weren't unexpected changes.
8. After you reach the desired results, you may click **Save** to create a new **End Points** table.
9. Click **OK** to close the **End Points** window.



10. Scan the image.

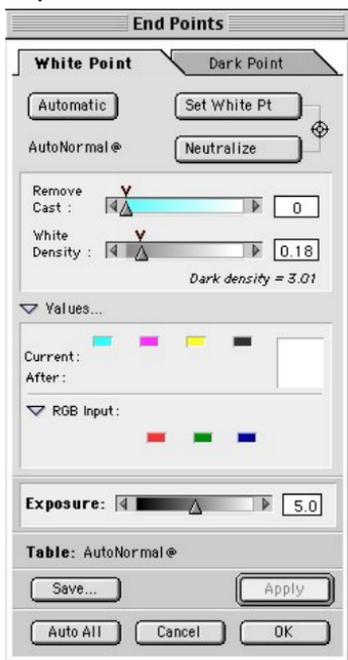
Exercise 4 – Increasing Exposure

As in [exercise 3](#), in this exercise you will also practice using the **Exposure** feature. However, this time you will use the **Exposure** feature to reveal details in the dark areas of the image. The **Exposure** feature does not affect the White and Dark points ([see diagram](#)).



1. Open file **EXERCISE 4**.
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Positive**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - Device Link: **DVL_Sup_Euro**
3. **Crop** image as shown (see above).
4. Click **Apply**.

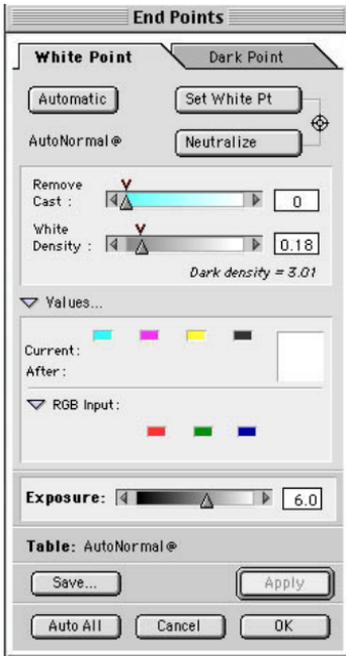
5. Open the **End Points** window.



- Look at the image. The main sculpture is too shadowed. There aren't enough details in the dark areas.

6. Increase the **Exposure** value.

- We recommend that you try a few values and check how they affect the shadows. For example:
 - a. Increase the exposure to 7.5.
 - b. Click **Apply**. Check the details in the main sculpture. Note that you lost details in the other sculptures.
 - c. An exposure of 6.0 should strengthen details in the dark areas without losing contrast and details in other parts of the image.
- Use the **Split Screen** option to compare the image before and after your changes.



7. Click **Apply**.
 - Always check the **White Point** and the **Dark Point** after making changes. Make sure their values are acceptable.
8. After you reach the desired results, you may click **Save** to create a new **End Points** table.
9. Click **OK** to close the **End Points** window.



10. Scan the image.

Negative Originals

Negative originals require special care because they have a built-in orange layer, which results in a yellowish cast. This cast differs depending on the kind of film and emulsion. The **Negative Balance** option provides tools to solve this problem.

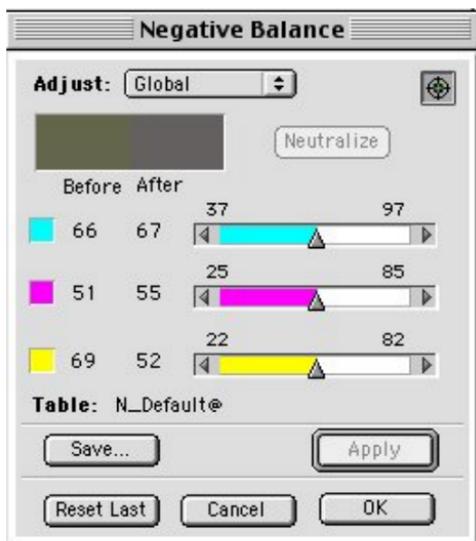
Exercise 5 – Basic Negative Balance Functions with ICC Workflow

In this exercise you will use the **Negative Balance** feature to remove a cast from an image that has an evident neutral area.



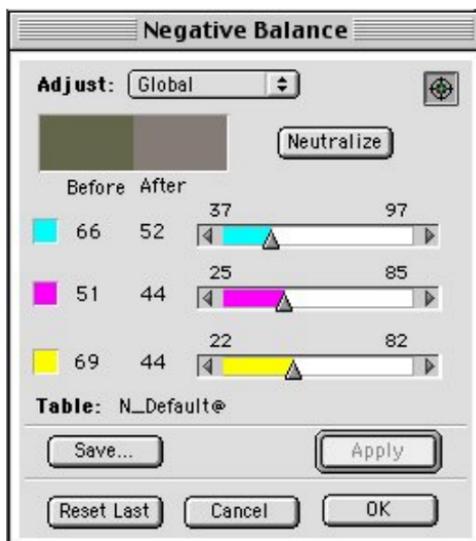
1. Open file **EXERCISE 5**.
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Negative**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - FilmType: **N_default@**
 - Device link: **DVL_Sup_Euro**
3. **Crop** image as shown (see above).
4. Click **Apply**.
5. Open the **Negative Balance** window.
 - Click a neutral color in the image. For example, the gray background (see above).

- Keep the **Global** option in the **Adjust** box to ensure that the entire image is neutralized.



6. Click the **Neutralize** button.

- Use the **Split Screen** option to compare the image before and after your changes.
- Note that the gray looks too “cold” and bluish. The Cyan value is too high. You can fix this by modifying the CMY values.
 - Decrease the Cyan. It should be approximately 8% higher than the Magenta and Yellow.
 - The Magenta and Yellow should have similar values.



- While making changes, notice how your changes affect the whole image. Make sure that all objects keep their natural color.
- Use the color box to check your changes. Make sure the color is gray.

TIP: When an image does not have a neutral color area, you can choose an object in the image and make changes to the CMY values until its color reaches natural tones. For example, the lemon should have a nice “lemon” yellow.

7. Click **Apply**.
 - The blue cast was removed and the colors look natural.
8. After you reach the desired results, you may click **Save** to create a new **film type**.
 - You will use the new **film type** in another exercise.
9. Click **OK** to close the **Negative Balance** window.



10. **Scan** the image.

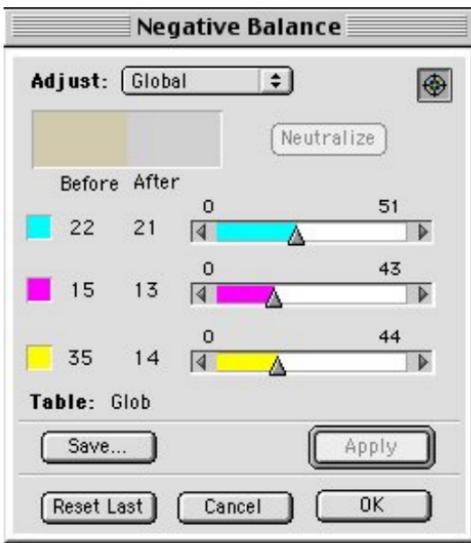
Exercise 6 – Advanced Negative Balance Functions with ICC Workflow

In this exercise you will use the Negative Balance to remove cast as well as to balance various tone ranges in an image.



1. Open file **EXERCISE 6**.
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Negative**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - FilmType: **N_default@**
 - Device link: **DVL_Sup_Euro**
3. Keep the default **crop**.
4. Click **Apply**.
5. Open the **Negative Balance** window.
 - Click a neutral color in the image. For example, the gray background (see above).
 - Keep the **Global** option in the **Adjust** box to ensure that the entire image is neutralized.
6. Click the **Neutralize** button.
 - Use the **Split Screen** option to compare the image before and after your changes.
 - Note that the gray looks too “cold” and bluish. The Cyan value is too high. You can fix that by modifying the CMY values.

- Decrease the Cyan. It should be around 8% higher than Magenta and Yellow.
- The Magenta and Yellow should have similar values.
- While working, notice how your changes affect the whole image. Make sure that the objects and the woman maintain their natural color.
- Use the color box to check your changes. Make sure the color is gray.



7. Click **Apply**.



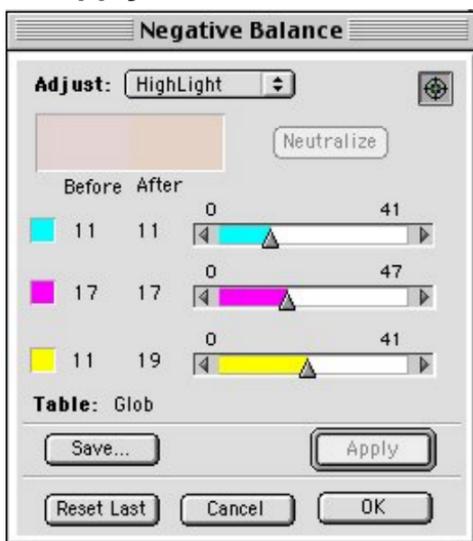
8. Select a skin tone. For example, click the woman's cheek ([see above](#)).

Tip: The following rule should provide a natural skin tone:

Cyan: $\frac{1}{2}$ of the Magenta value

Yellow: 10% more than the Magenta value

- Change the **Global** option to **Highlight** in the **Adjust** box.
 - Increase the Yellow value to correct the skin tone values. Observe the changes in the color box until you reach satisfactory results.
9. Click **Apply**.

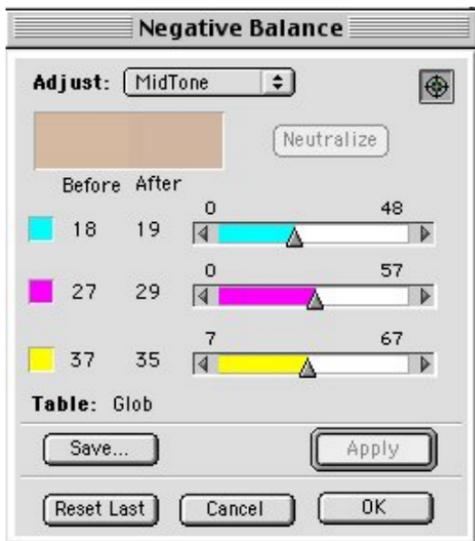


10. Now the image needs some attention in the Midtones. The midtones are pale.



- Select a color in the midtones range (see above).
- Change the **Highlight** option to **Midtone** in the **Adjust** box.
- Increase the CMY values until the skin tone and all colors look natural.

11. Click **Apply**.



- The resulting image should be a balanced picture with a healthy skin tone and natural colors.

12. After you reach the desired results, you may click **Save** to create a new **film type**.

- You will use this table in another exercise.

13. Click **OK** to close the **Negative Balance** window.

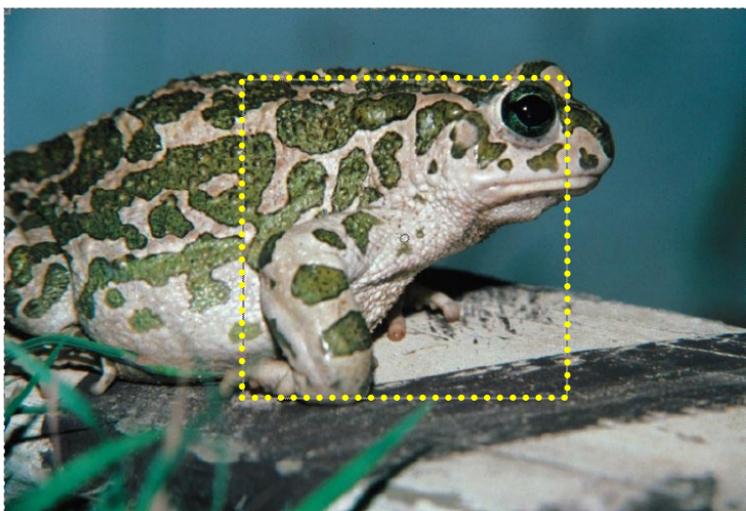


14. Scan the image.

Sharpness

In the next three exercises you will practice enhancing the Sharpness on scans of 35mm slides at different scales. Please refer to the section on [Sharpness](#) at the end of this tutorial.

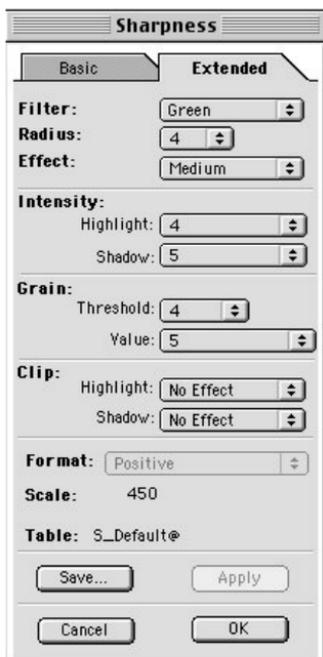
Exercise 7 – 35mm Slide, 450% Scale



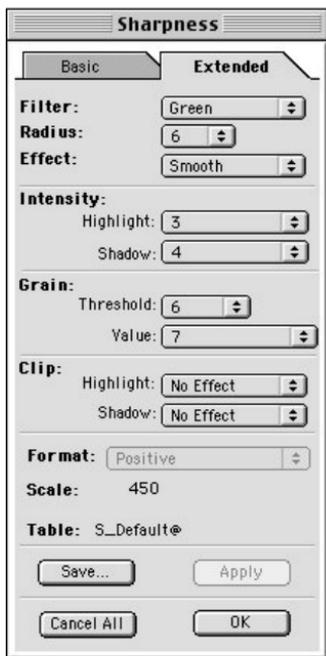
1. Open file **EXERCISE 7**.
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Positive**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - Device Link: **DVL_Sup_Euro**
3. Keep the default **Crop**.
4. Click **Apply**.
5. Use the **Max Detail** feature to enlarge an area of the image (see above). Enlarge it to its maximum.
 - Click the **Max Detail** button in the toolbar and then double-click the area that you want to enlarge.

TIP: Use **<Command +>** to enlarge the area and **<Command ->** to reduce the area.

- Once the **Max Detail** appears in the **Preview Browser**, double-click it to open it in the **Preview** window.
6. Open the **Sharpness** window, and select the **Extended** tab.



- Use the **Split Screen** option to compare the image before and after your changes.
- Your objective is to sharpen the details and reduce the grains in the background of the image. The following settings should give you better results than the default settings:
 - Filter: **Leave as is**
 - Radius: **6**
 - Effect: **Smooth**
 - Intensity: **Highlight: 3**
Shadow: 4
 - Grain: **Threshold: 6**
Value: 7

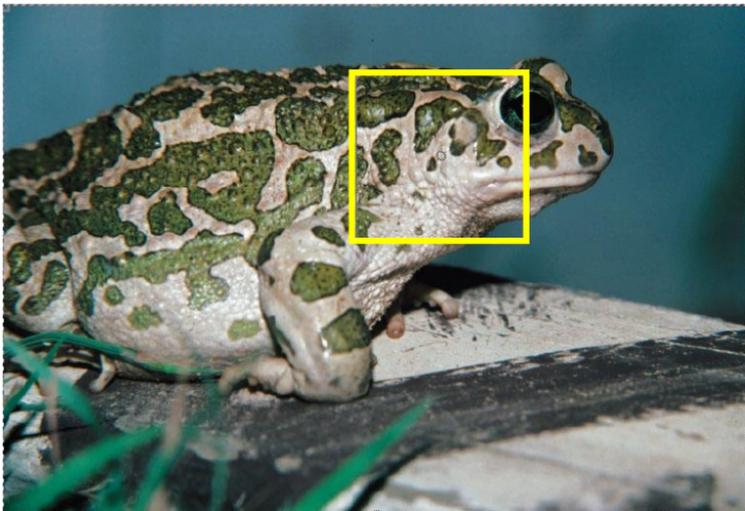


7. Click **Apply**.
8. After you reach the desired results, you may click **Save** to create a new **Sharpness** table.
9. Click **OK** to close the **Sharpness** window.



10. **Scan** the image.
11. **Proof** the images. Compare the original image to the enhanced one.

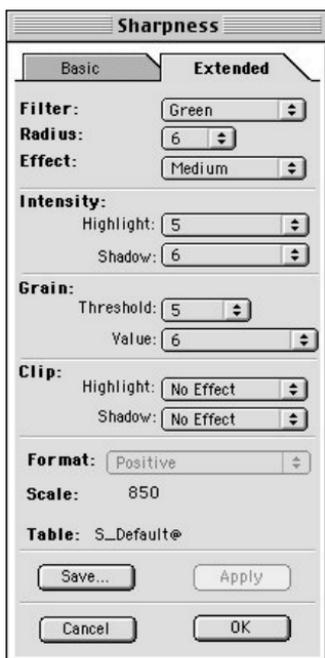
Exercise 8 – 35mm Slide, 850% Scale



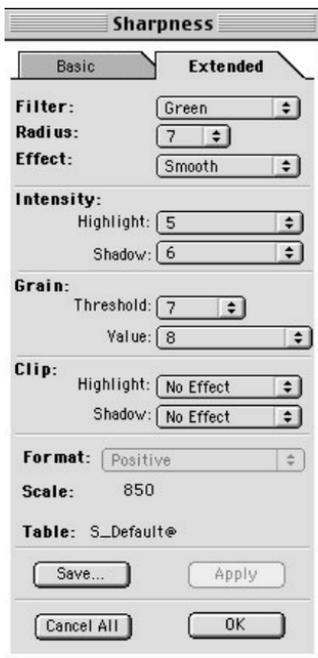
1. Open file **EXERCISE 8**.
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Positive**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - Device Link: **DVL_Sup_Euro**
3. Keep the default **Crop**.
4. Click **Apply**.
5. Use the **Max Detail** feature to enlarge an area of the image (see above). Enlarge it to its maximum.
 - Click the **Max Detail** button in the toolbar and then double-click the area that you want to enlarge.

TIP: Use **<Command +>** to enlarge the area and **<Command ->** to reduce the area.
 - Once the **Max Detail** appears in the **Preview Browser**, double-click it to open it in the **Preview** window.

6. Open the **Sharpness** window, and select the **Extended** tab.



- Use the **Split Screen** option to compare the image before and after your changes.
- Your objective is to reduce the grains in the background of the image. The following settings should give you good results.
 - Filter: **Leave as is**
 - Radius: **7**
 - Effect: **Smooth**
 - Intensity: **Highlight: Leave as is**
Shadow: Leave as is
 - Grain: **Threshold: Increase to 7**
Value: Increase to 8



Note: These values are not very different from the default ones. Always try to get the best results with the smallest number of changes.

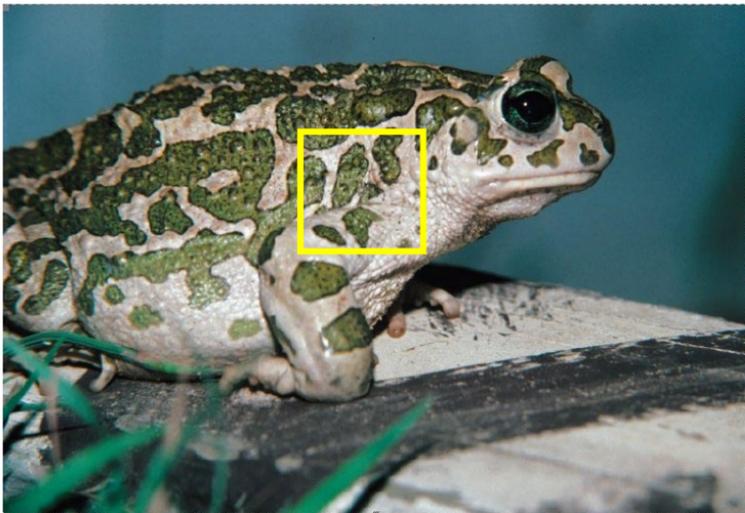
7. Click **Apply**.
8. After you reach the desired results, you may click **Save** to create a **Sharpness table**.

9. Click **OK** to close the **Sharpness** window.



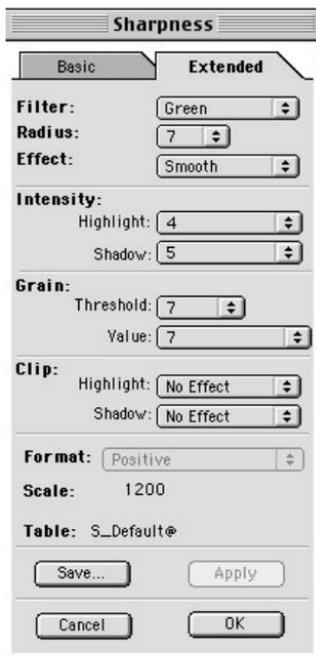
10. **Scan** the image.
11. **Proof** the images. Compare the original image to the enhanced one.

Exercise 9 – 35mm Slide, 1200% Scale

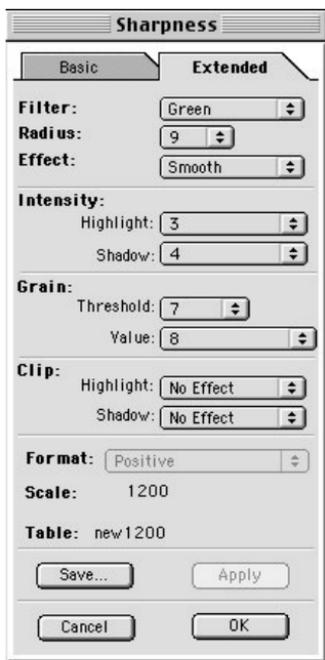


1. Open file **EXERCISE 9**.
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Positive**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - Device Link: **DVL_Sup_Euro**
3. Keep the default **Crop**.
4. Click **Apply**.
5. Use the **Max Detail** feature to enlarge an area of the image (see above). Enlarge it to its maximum.
 - Click the **Max Detail** icon in the toolbar and then double-click the area that you want to enlarge.

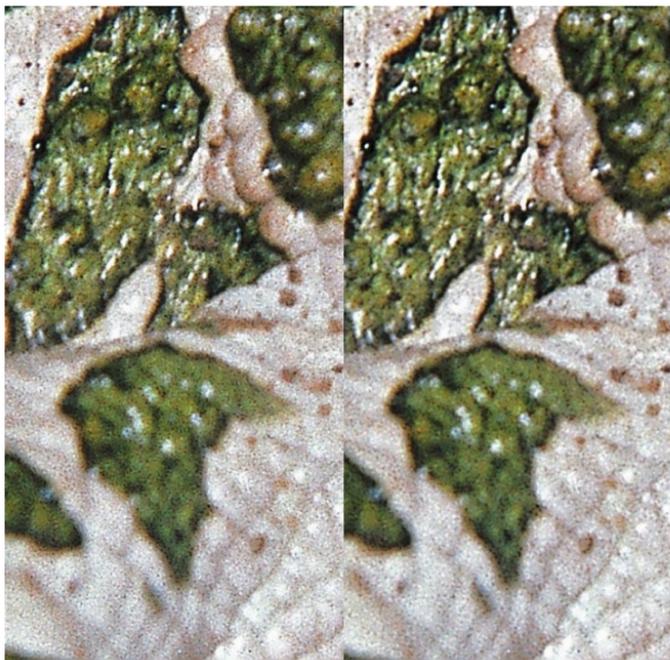
TIP: Use **<Command +>** to enlarge the area and **<Command ->** to reduce the area.
 - Once the **Max Detail** appears in the **Preview Browser**, double-click it to open it in the **Preview** window.
6. Open the **Sharpness** window, and select the **Extended** tab.



- Use the **Split Screen** option to compare the image before and after your changes.
- Your objective is to reduce the grains in the background of the image. When scanning negatives, especially big enlargements of 35 mm negatives, you can achieve good results by increasing the Radius value and decreasing the Intensity. This increases sharpness and decreases the graininess. The following settings should give you good results.
 - Filter: **Leave as is**
 - Radius: **9**
 - Effect: **Smooth**
 - Intensity: **Highlight: 3**
Shadow: 4
 - Grain: **Threshold: 7**
Value: 8



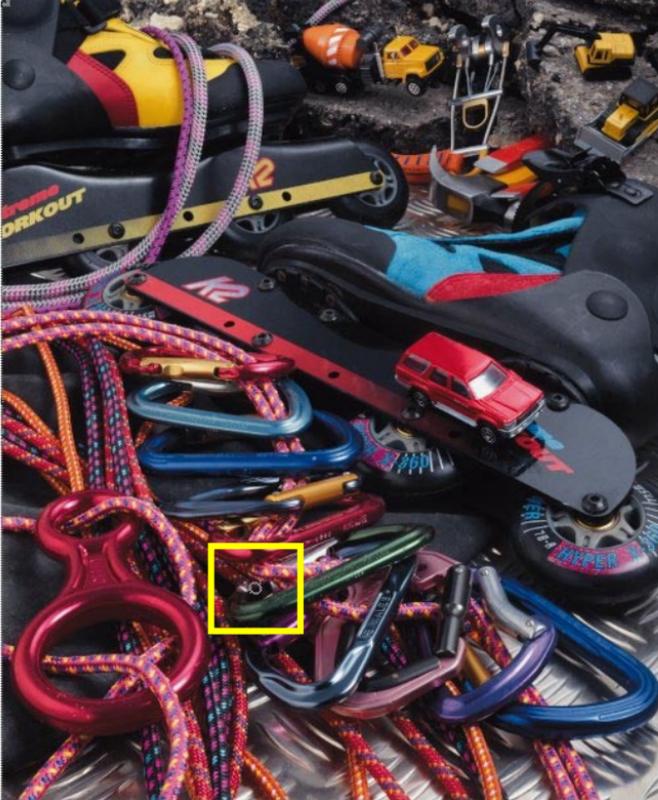
7. Click **Apply**.
8. After you reach the desired results, you may click **Save** to create a Sharpness table.
9. Click **OK** to close the **Sharpness** window.



10. **Scan** the image.
11. **Proof** the images. Compare the original image to the enhanced one.

Exercise 10 – Enhancing Metallic Images

This exercise shows how important it is to know the purpose of the scan when using the **Sharpness** tool. For example, when scanning metallic or technical images, the details are very important, therefore, exaggerating the **Sharpness** settings usually gives good results.

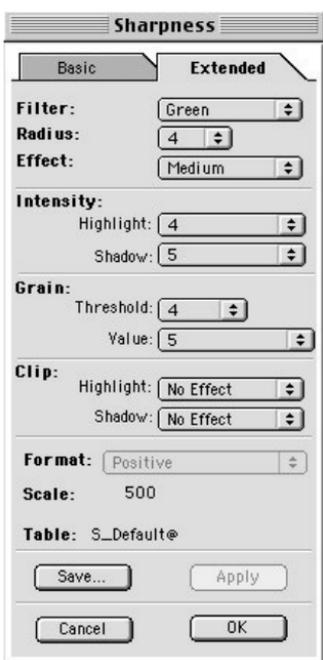


1. Open file **EXERCISE 10**.
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Positive**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - Device Link: **DVL_Sup_Euro**
3. Keep the default **Crop**.
4. Click **Apply**.
5. Use the **Max Detail** feature to enlarge an area of the image (see above). Enlarge it to its maximum.
 - Click the **Max Detail** icon in the toolbar and then double-click the area that you want to enlarge.

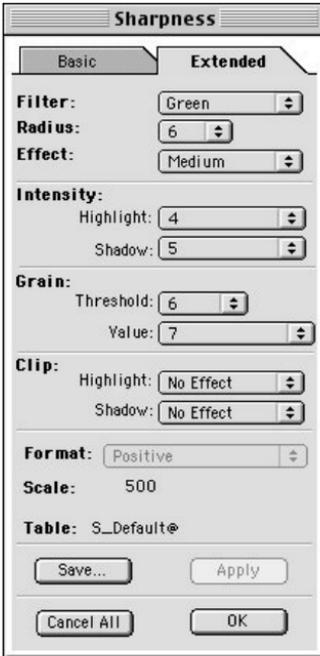
TIP: Use **<Command +>** to enlarge the area and **<Command ->** to reduce the area.

- Once the **Max Detail** appears in the **Preview Browser**, double-click it to open it in the **Preview** window.

6. Open the **Sharpness** window, and select the **Extended** tab.



- Use the **Split Screen** option to compare the image before and after your changes.
- These are the settings we recommend:
 - Filter: **Leave as is**
 - Radius: **6**
 - Effect: **Leave as is**
 - Intensity: **Highlight: Leave as is**
Shadow: Leave as is
 - Grain: **Threshold: 6**
Value: 7



7. Click **Apply**.
8. After you reach the desired results, you may click **Save** to create a **Sharpness** table.
9. Click **OK** to close the **Sharpness** window.



10. **Scan** the image.
11. **Proof** the images. Compare the original image to the enhanced one.

Exercise 11 – 4x5 Slide with a Multiple Textured Theme

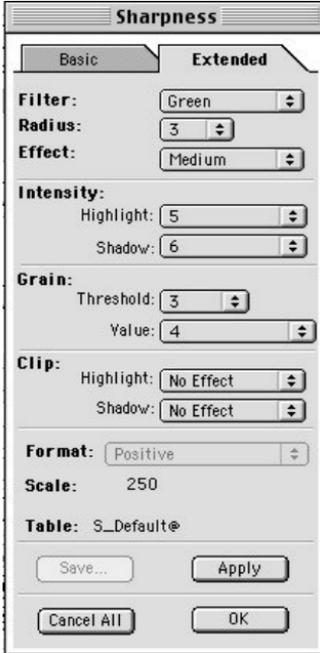
When scanning 4x5 slides, especially for small scale enlargements, the default **sharpness** settings are adequate. However, in this exercise, you will use the **Radius** feature to strengthen the different textures in the image.



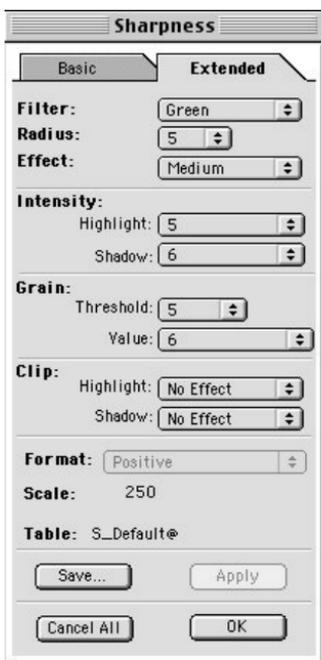
1. Open file **EXERCISE 11**.
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Positive**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - Device Link: **DVL_Sup_Euro**
3. **Crop** the image as shown above.
4. Click **Apply**.
5. Use the **Max Detail** feature to enlarge an area of the image (see above). Enlarge it to its maximum.
 - Click the **Max Detail** icon in the toolbar and then double-click the area that you want to enlarge.

TIP: Use **<Command +>** to enlarge the area and **<Command ->** to reduce the area.

- Once the **Max Detail** appears in the **Preview Browser**, double-click it to open it in the **Preview** window.
6. Open the **Sharpness** window, and select the **Extended** tab.



- Use the **Split Screen** option to compare the image before and after your changes.
- These are the settings we recommend you choose.
 - Filter: **Green**
 - Radius: **5**
 - Effect: **Leave as is**
 - Intensity: **Highlight: Leave as is**
Shadow: Leave as is
 - Grain: **Threshold: 5**
Value 6



7. Click **Apply**.
8. After you reach the desired results, you may click **Save** to create a **Sharpness** table.
9. Click **OK** to close the **Sharpness** window.



10. **Scan** the image.
11. **Proof** the images. Compare the original image to the enhanced one.

Exercise 12 – 35mm, 800% Scale

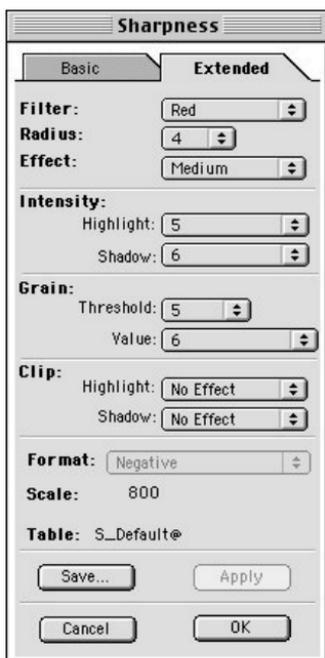
In this exercise you will enhance the sharpness for a big enlargement of a 35mm slide. Negative transparencies require special attention because they tend to be very grainy.



1. Open file **EXERCISE 6** (same file as in [exercise 6](#)).
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Negative**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - FilmType: **Use the film type you created in exercise 6**
 - Device link: **DVL_Sup_Euro**
3. Keep the default **Crop**.
4. Click **Apply**.
5. Use the **Max Detail** feature to enlarge an area of the image (see above). Enlarge it to its maximum.
 - Click the **Max Detail** icon in the toolbar and then double-click the area that you want to enlarge.

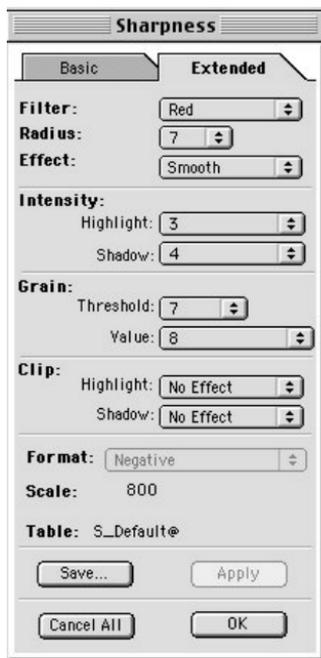
TIP: Use **<Command +>** to enlarge the area and **<Command ->** to reduce the area.
 - Once the **Max Detail** appears in the **Preview Browser**, double-click it to open it in the **Preview** window.

6. Open the **Sharpness** window, and select the Extended tab.



- Use the **Split Screen** option to compare the image before and after your changes.
- The following settings should reduce the grain satisfactorily:
 - Filter: **Leave as is**. The red filter is the best option when scanning negatives.
 - Radius: **7**
 - Effect: **Smooth**
 - Intensity. **Highlight 3**
Shadow: 4
 - Grain: **Threshold: 7**
Value: 8

When scanning negatives, especially 35 mm negatives, you can achieve good results by increasing the Radius value and decreasing the Intensity. This increases sharpness and decreases the graininess.



7. Click **Apply**.

- Use the **Split Screen** option to compare the image before and after your changes.

8. After you reach the desired results, you may click **Save** to create a new Sharpness Table.

9. Click **OK** to close the **Sharpness** window.



10. **Scan** the image.
11. **Proof** the images. Compare the original image to the enhanced one.

Exercise 13 – 6X7 Negative Originals

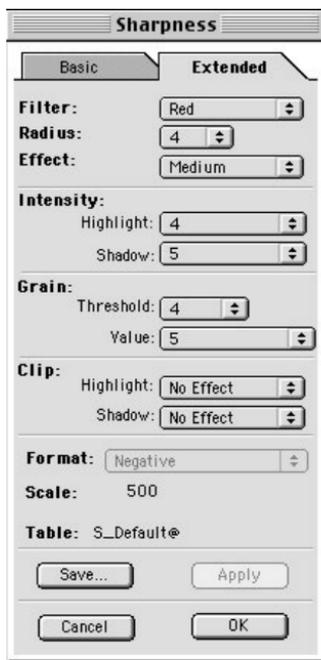
In this exercise you will see how adequate **sharpness** settings affect other parameters in the image. Sharpness settings can make the image colors look different, more vivid.



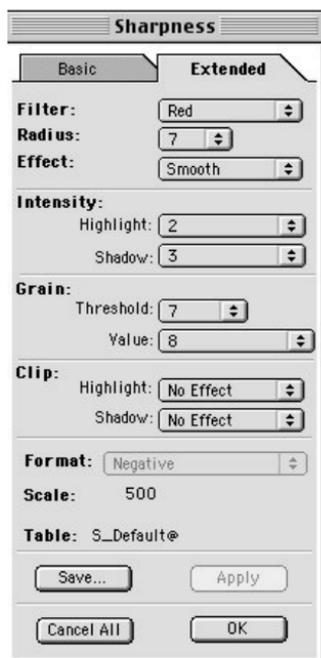
1. Open file **EXERCISE 5** (same file used in [exercise 5](#)).
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Negative**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - FilmType: **Use the film type you created in exercise 5.**
 - Device link: **DVL_Sup_Euro**
3. Keep the default **Crop**.
4. Click **Apply**.
5. Use the **Max Detail** feature to enlarge an area of the image (see above). Enlarge it to its maximum.
 - Click the **Max Detail** icon in the toolbar and then double-click the area that you want to enlarge.

TIP: Use **<Command +>** to enlarge the area and **<Command ->** to reduce the area.

- Once the **Max Detail** appears in the **Preview Browser**, double-click it to open it in the **Preview** window.
6. Open the **Sharpness** window, and select the **Extended** tab.



- Use the **Split Screen** option to compare the image before and after your changes. Keep it active throughout the exercise.
- The following settings should reduce grain satisfactorily:
 - Filter: **Lease as is**. The red filter is the best option when scanning negatives.
 - Radius: **7**
 - Effect: **Smooth**
 - Intensity: **Highlight: 2**
Shadow: 3
 - Grain: **Threshold: 7**
Value: 8



7. Click **Apply**.

- The image is now less grainy and looks sharper. Note that the colors have also become more vivid.

8. After you reach the desired results, you may click **Save** to save the new sharp table.

9. Click **OK** to close the **Sharpness** window.



10. **Scan** the image.
11. **Proof** the images. Compare the original image to the enhanced one.

Color Correction

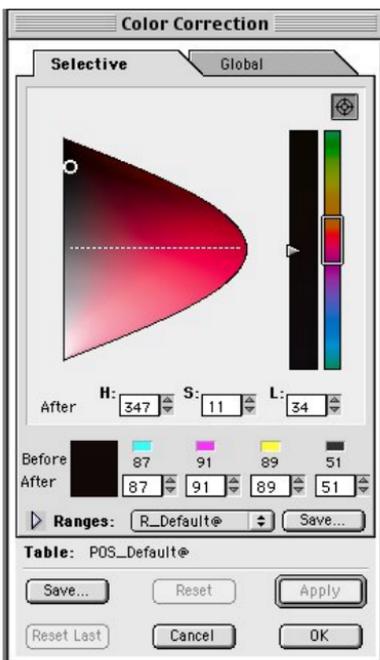
Exercise 14 – Editing Colors Using the Selective Color Function

In this exercise you will edit the colors of an image, modifying the Hue, Saturation, and Luminance ranges, as well as the CMYK values.

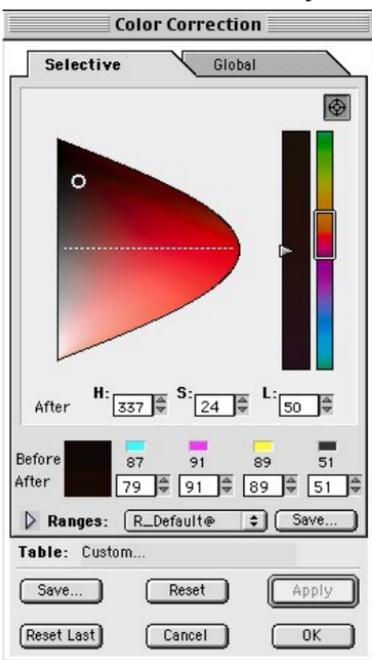


1. Open file ***EXERCISE 14***.
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Positive**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - Device link: **DVL_Sup_Euro**
3. Keep the default **Crop**.
4. Click **Apply**.

5. Open the **Color Correction** window.



- Try to reveal more details in the player's pants. Click the man's pants near the pockets ([see above](#))
- To change the pants to a brown color, you should decrease the Cyan value.
 - Decrease Cyan by 8 -10 points.

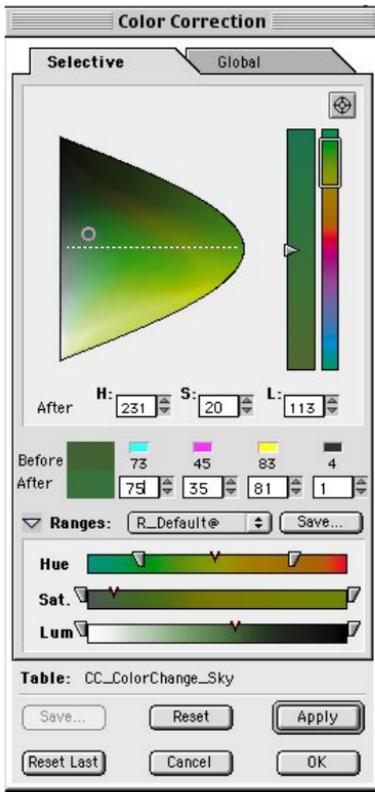


6. Click **Apply**.

- Use the **Split Screen** option to compare the image before and after your changes. This will help you immediately evaluate your changes. Click **Apply** after each change.
7. When you achieve a satisfactory result, you may click **Save**.
- Your changes are saved as a **Device Link** profile. As you will continue to work on this image, we recommend you save each step as a different Device Link profile. This way, if you are not satisfied with your last change, you can return to the previous stage.
8. Now, make the green colors of the grass more vivid. The grass has a slight yellow cast.
- Click a point in the grass. Make sure it has a high yellow value.
 - In the **Color Correction** window, move the frame in the hue slider up towards the more saturated greens.
 - Also, increase the saturation, luminosity and hue values.
9. Click the **Show Mask** button. Using the **Mask** feature will help you limit the changes only to the grass.
- Make sure not to change the greens in the trees. The mask should appear only on the grass.



10. Click the **Ranges** option. With this option, you can define the ranges of colors to modify and remove the mask from the tree leaves, limiting your changes to the grass.
 - In the **Luminance** range:
 - Move the right arrow to the left. This should remove most of the mask from the trees.



- In the **Hue** range:
 - Move the right arrow to the left to remove the reds. This should remove the mask that appeared on the player’s white shirt.
 - Move the left arrow to the left to include more greens. This will enlarge the mask on the grass.
- In the **Saturation** range:
 - Move the left arrow to the right. This will remove the grays from the range. Most of the mask on the trees should disappear.



11. Click **Apply**.

12. After you reach the desired results, you may click **Save** to create a Device Link profile.

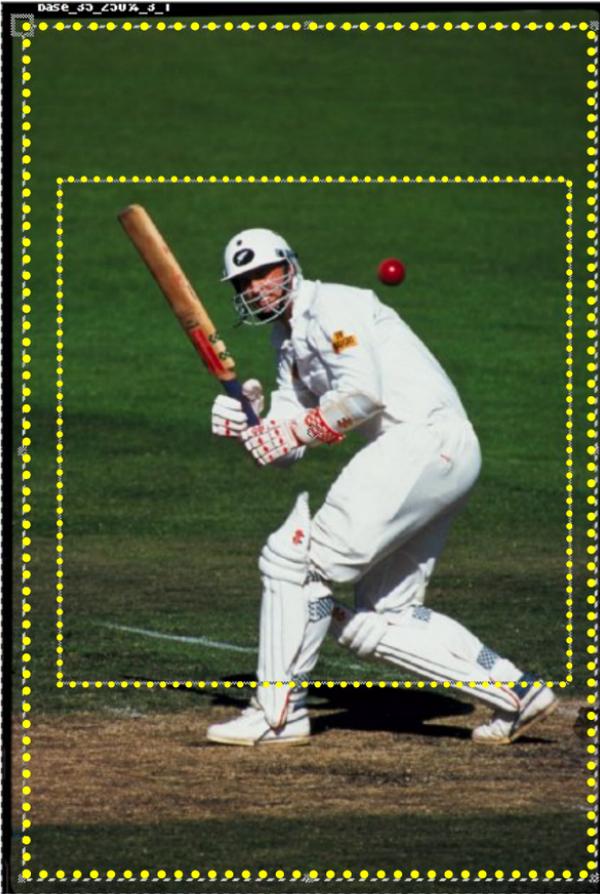
13. Click **OK** to close the **Color Correction** window.



14. **Scan** the image.

Exercise 15 – Opening Shadows Using the Color Correction Tool

In this exercise, you will brighten shadowed areas by modifying the Hue, Saturation, and Luminance ranges.



1. Open file **EXERCISE 15**.
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Positive**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - Device Link: **DVL_Sup_Euro**
3. **Crop** the image as shown above.
4. Use the **Max Detail** feature to enlarge an area of the image (see above). Enlarge it to its maximum.
 - Click the **Max Detail** icon in the toolbar and then double-click the area that you want to enlarge.

TIP: Use **<Command +>** to enlarge the area and **<Command ->** to reduce the area.

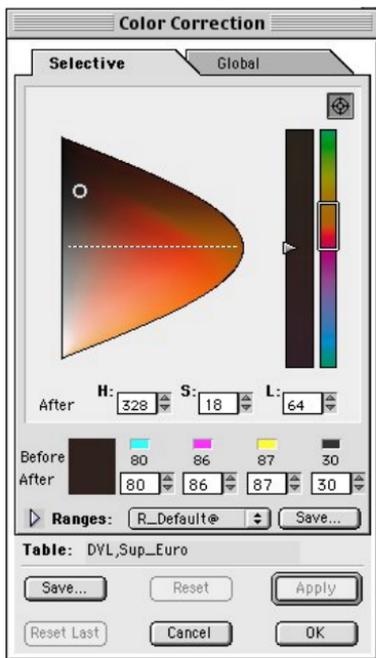
- Once the **Max Detail** appears in the **Preview Browser**, double-click it to open it in the **Preview** window.
- As this image was scanned at a very small scale, the **Max Detail** provides maximum details.

5. Open the Color Correction window.

- Your objective is to brighten the eyes of the player, which are shadowed by his cap. If you try to brighten the eyes area using the **Exposure** function in the **End Points** window, like you did in [exercise 4](#), you will overexpose the entire image. Therefore, you need to use the **Color Correction** function would be a better option.

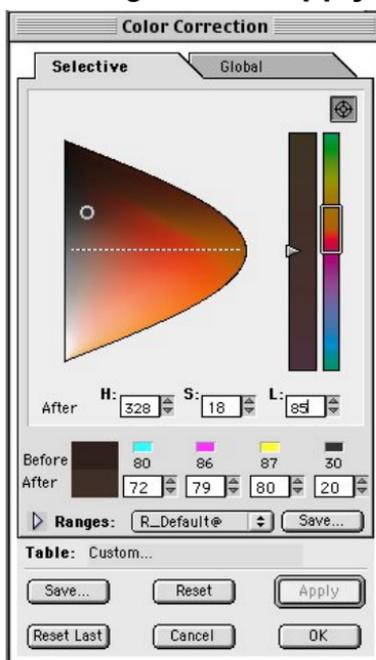
The **Color Correction** function allows you to modify specific colors, thus limiting the effects of your changes. You could use the **LS Curves** function, but it would also affect the player's shadow. The **Color Correction** function allows you to make changes to a specific area of an image that contains color data.

6. Click anywhere in the player's eyes that isn't 100% black.



7. Increase the **Luminance** value by approximately 15 to 20 points. The CMYK values will decrease as a result.

- Use the **Split Screen** option to compare the image before and after your changes. This will help you immediately evaluate your changes. Click **Apply** after each change.



8. Click **Apply**.

9. After you reach the desired results, you may click **Save** to create a Device Link profile.
10. Click **OK** to close the **Color Correction** window.

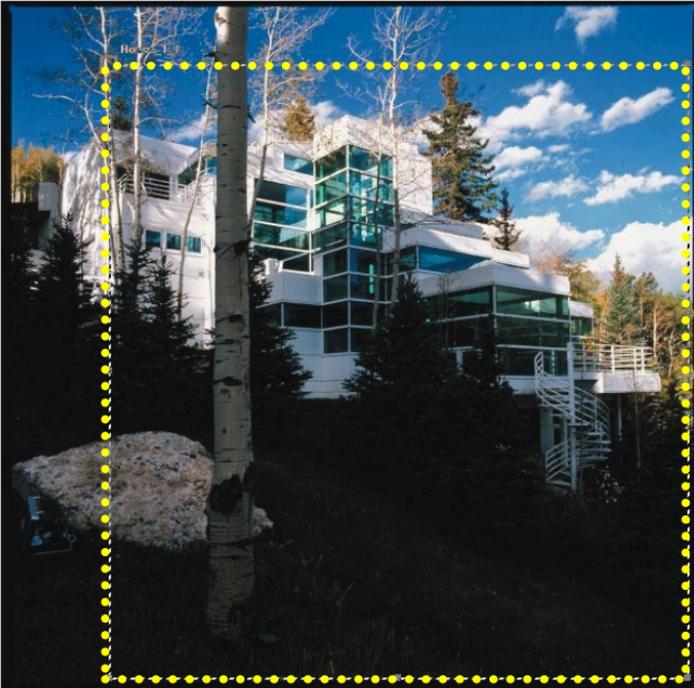


11. **Scan** the image.

LS Curves

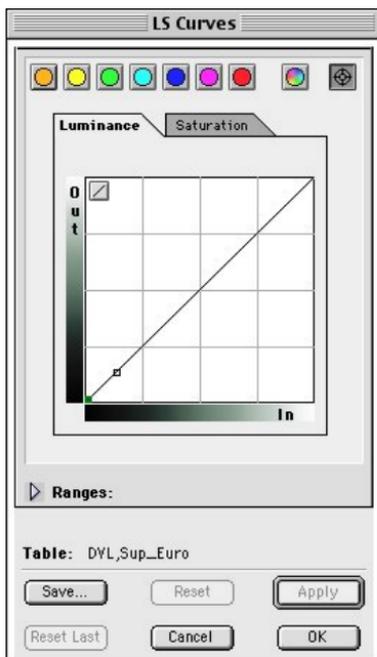
Exercise 16 – Revealing Details in Dark Areas

In this exercise you will practice the **LS Curves** feature both in the **Luminance** and the **Saturation** modes. You will see how to enhance details in images, regardless of the quality of the originals.

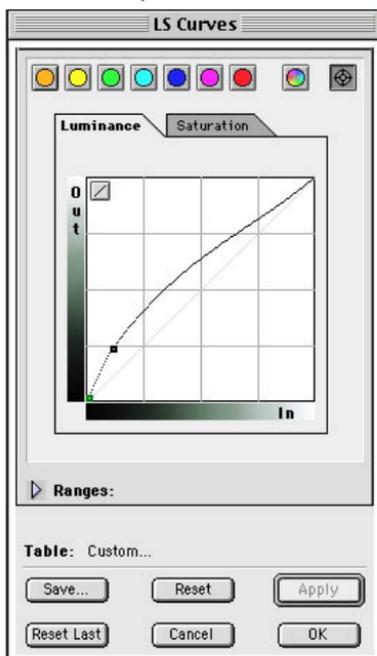


1. Open file **EXERCISE 16**.
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Positive**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - Device Link: **DVL_Sup_Euro**
3. **Crop** the image as shown above.
4. Click **Apply**.
5. Open the **LS Curves** window.
 - The green colors of the grass and the trees are too dark and flat. You need to brighten them and add depth without damaging the colors of the house.

- Click anywhere in the grass. A point appears in the curve showing the position of the chosen color in the curve.



- Drag the point up until you reach the desired level of details in the grass (see below).



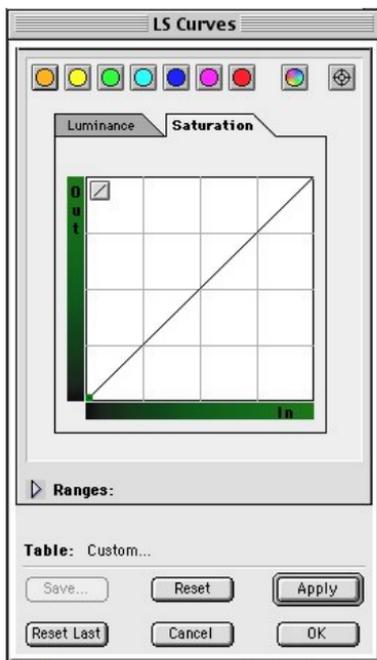
- Use the **Split Screen** option to compare the image before and after your changes. Click **Apply** after each change.



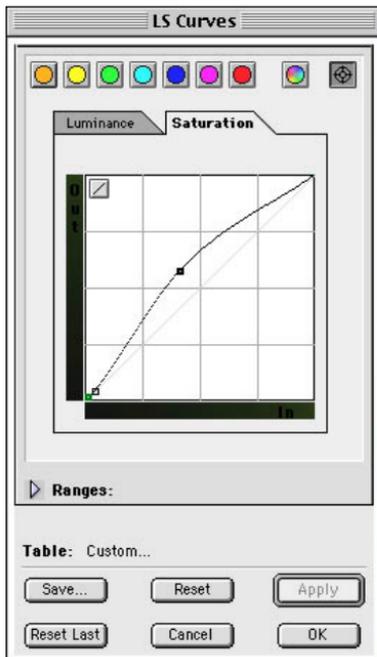
7. When you are satisfied with the results, you may click **Save** to create a Device Link profile.

Tip: As you will continue to work on this image, we recommend you save each step as a different Device Link profile. Therefore, if you are not satisfied with your last change, you can always return to the previous stage.

8. Click **OK** to close the **LS Curves** window.
9. To make the green colors more vivid, use the **Saturation** curve.
 - Open the **LS Curves** window.
 - Click the **Saturation** tab.



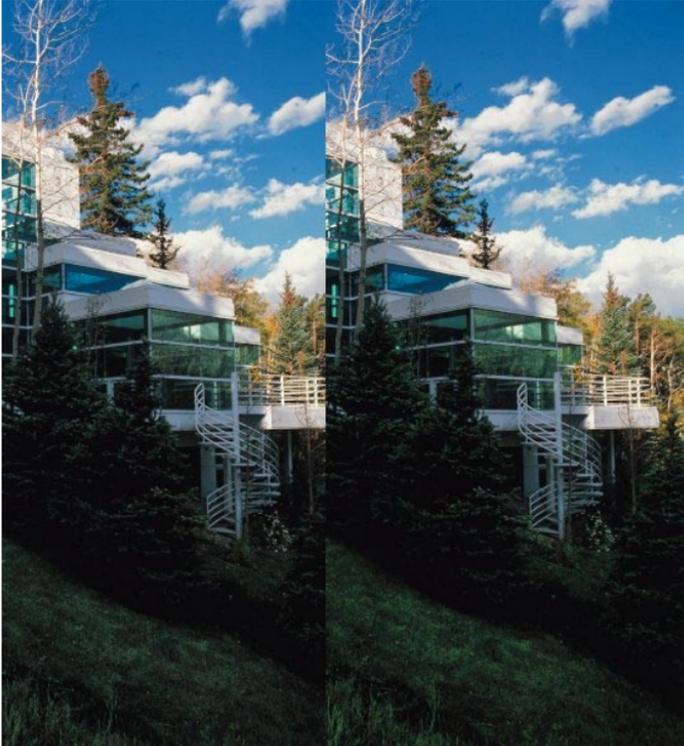
- Click a point in the grass.
- Click the midtone in the **saturation** curve and drag it up (see below).



10. Click **Apply.**

- Keep dragging the point up until you are satisfied with the results. Click **Apply** after each change.

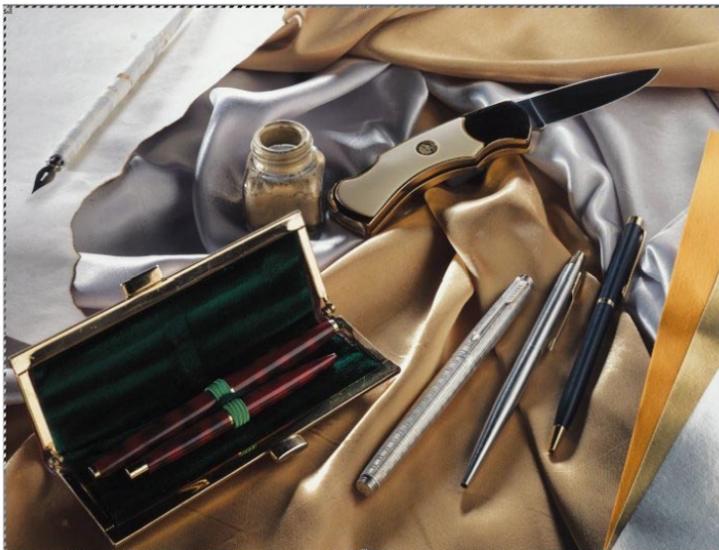
11. After you reach the desired results, you may click **Save** to create a Device Link profile.
12. Click **OK** to close the **LS Curves** window.



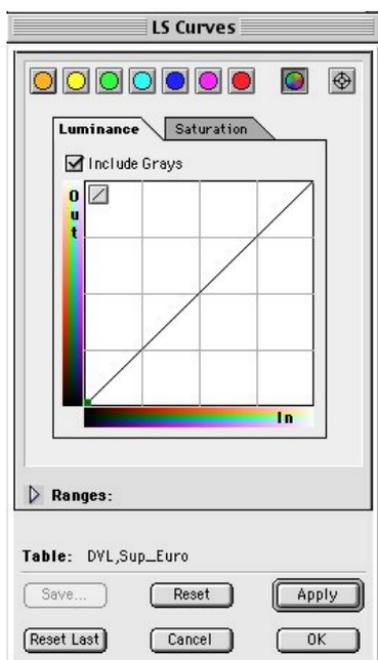
13. **Scan** the image.

Exercise 17 – Adding Vividness to Colors

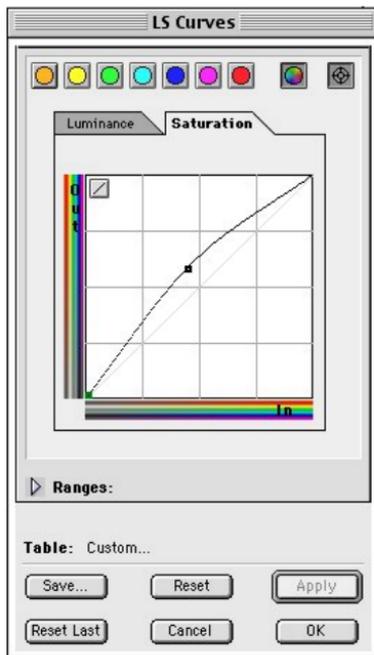
In this exercise we will practice using the **Saturation** curve to make the colors in an image more vivid.



1. Open file **EXERCISE 17**.
2. Choose these settings in the **Setup** dialog box:
 - Mode: **Color CMYK**
 - Media: **Positive**
 - Scale: **100%**
 - Resolution: **12 DPM**
 - Device Link: **DVL_Sup_Euro**
3. Keep the default **Crop**.
4. Click **Apply**.
5. Open the **LS Curves** window.



6. Click the **Saturation** tab.
7. Click the **midtone** and drag it up until the colors reach the desired vividness.



- Use the **Split Screen** option to compare the image before and after your changes. Click **Apply** after each change.
8. Click **Apply**.

9. After you reach the desired results, you may click **Save** to create a Device Link profile.
10. Click **OK** to close the **LS Curves** window.



11. **Scan** the image.

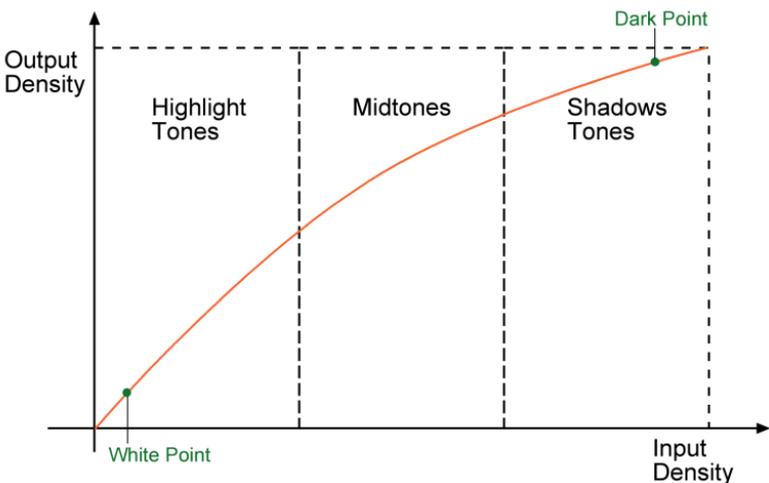
Learn More

This section further explains concepts learnt in the exercises you performed using this tutorial.

End Points

The tone range of each picture is translated by a Tone Reproduction Curve between two selected Points:

- White Point** – the brightest neutral point of an image that contains detail and can be seen in print
- Dark Point** – the darkest neutral point of an image that contains detail.



CreoScitex scanners analyze each picture crop and select the White and Dark point automatically.

The End Points function is one of the scanner functions used for tonal changes. This function allows you to control the Tone Reproduction Curve. It uses the image information before the tone compression.

Remove Cast

Color casts appear in an image as a dominant or prevailing color. The cast is usually caused by photographic problems or incorrect processing. Some casts are produced deliberately by the photographer to create a special atmosphere within the picture.

A color cast means that the separation values are not balanced; one separation has an incorrect value in a certain tone area or in the entire picture. The color cast is usually more noticeable in the highlight to midtone areas, but can appear in any or all tonal areas.

Unwanted color casts can be automatically removed from the image using the **Remove Cast** function in the **End Points** Window.

The amount of cast removal can be set by the user to a default value for certain jobs, or manually controlled for specific images.

Note: In extreme cases, the cast cannot be removed by using the Remove Cast tool. Too much overall cast causes the scanner to think that the cast is a wanted effect. For example, when scanning a sunset image, you may want to maintain the reddish cast.

Exposure

In some cases, the original was not properly photographed or developed. An overexposed or underexposed original usually results in an unintentional loss of detail. When overexposed, the picture is too bright – the highlights appear washed out and the colors look faded or unsaturated. When underexposed, the picture is too dark – the midtones and shadows appear very dark or plugged up.

The Exposure function controls the shape of the Tone Reproduction Curve, enabling the user to brighten or darken the picture without losing details and without changing the End Points. The Exposure function affects the midtones.

The default exposure setting is 5.0. Decreasing this value darkens the picture and adds contrast. Increasing this value brightens the picture and reduces contrast.

Sharpness

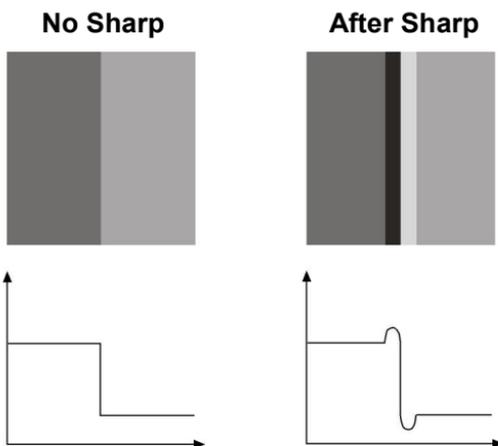
During the scanning process the sharpness of even the best image is affected in several ways:

- Contrast deteriorates due to the compression of the density range.
- The resolution of the halftone printed image is significantly lower than that of the continuous tone image.
- Printing problems cause edges and lines on the printed material to appear blurred or soft.
- Enlargement of the original causes blurring in the scanned image.

Sharpness Control

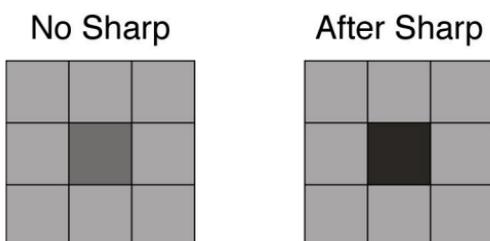
The Sharpness Control function enhances the picture to compensate for quality loss during the scanning and printing stages. Sharpness Control is applied automatically, or it can be adjusted by the scanner operator.

Sharpening occurs on the borders of adjoining areas of different brightness. After sharpening, a very thin outline (contour), or a light and dark strip, emphasizes the border between the lighter and darker areas.



The scanner increases sharpness by comparing the light intensity, or a pixel, to its surrounding area and modifying the pixel accordingly. That is,

- If the pixel is darker than the surrounding area, the scanner darkens it even more to achieve a sharper contrast.
- If the pixel is lighter than the surrounding area, the scanner lightens it even more.
- If the light intensity of the pixel is the same as that of the surrounding area, no action is taken.



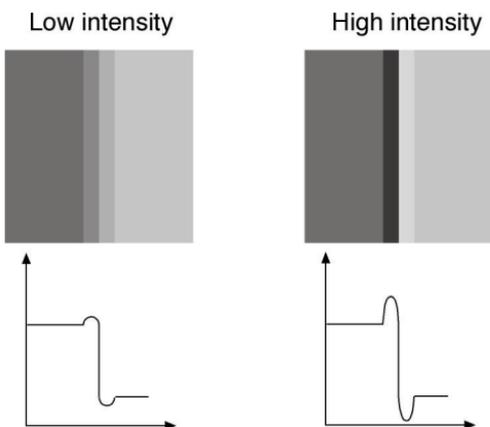
Sharpness Control default tables are supplied with every version of the CreoScitex EverSmart scanners. The default tables are based on the type of original and a set enlargement, and are applied automatically. Note that different types of film types will require slight adjustments to the Sharpness Control in order to reach the desired results.

Intensity

The Intensity function determines the brightness of the “contours” produced by the Sharpness Control mechanism. The higher the Intensity value, the stronger the contour.

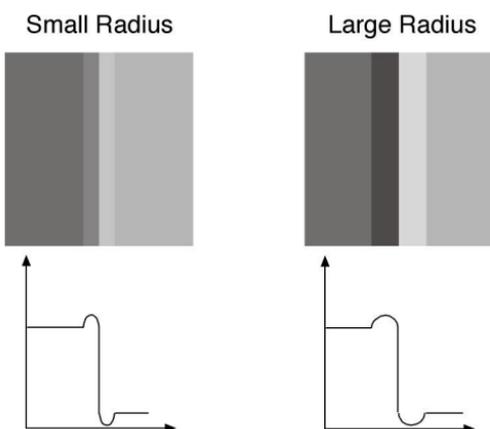
There are two separate controls:

- *Highlight*: for the bright contour
- *Shadow*: for the dark contour



Radius

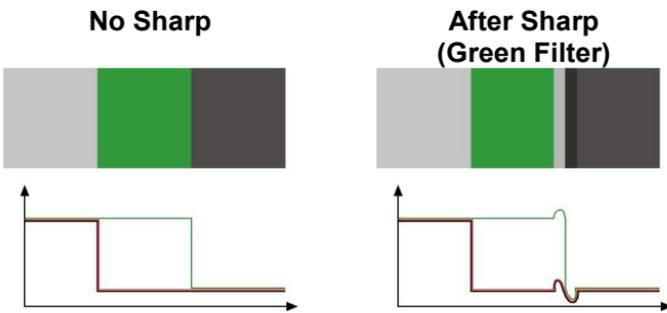
The Radius function determines thickness of the contour produced by the Sharpness function. The larger the number, the thicker the contour surrounding the details in the image. It also determines at what size edges are sharpened. Edges that are wider than the radius are not sharpened.



Filter

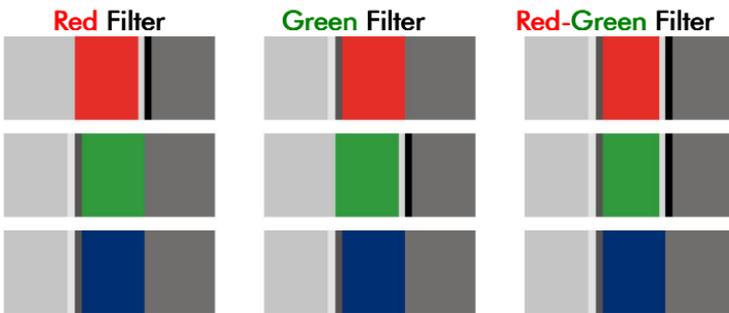
The filter function defines the color channel used as a reference for picture sharpening. Single color filters (Red, Green or Blue) result in some colors being sharpened, while ALL sharpens all colors in a balanced form. When using a single color filter (Red, Green or Blue), all the RGB channels are sharpened according to the variations in brightness in the selected filter channel.

The sharp process works on the RGB data before the conversion to CMYK. According to the RGB color model, White is a combination of Red, Green and Blue in their highest values, and Black is a combination of RGB in their lowest values.



→ As a rule of thumb, since details are usually darker than their background, choose the filter according to the color of the background.

For example, the details in leaves are darker than the green background, so choosing a Green filter will enhance them. This is true for all single color filters. The behavior of multicolor filters (ALL or Red-Green) is more complex and generally results in sharpening of more color combinations than those of a single color filter.



Grain Reduction

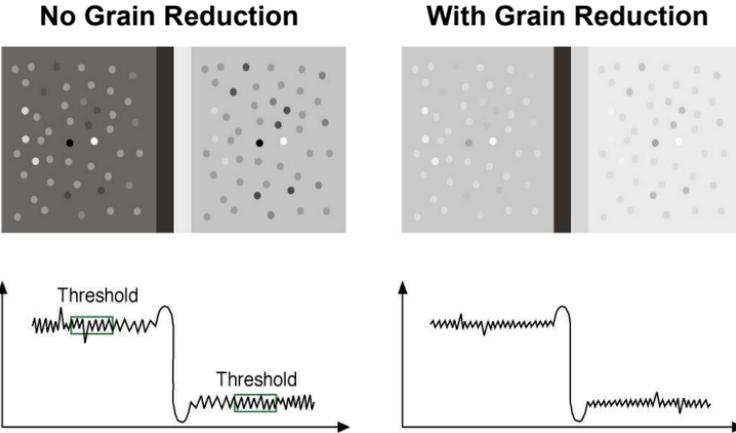
Grain is seen when the film's emulsion particles become visible at certain enlargements. The Grain function reduces the sharpness of the grain to make it look smoother and more even.

Grain is reduced by decreasing sharpness according to the nature of the surrounding area. Flat areas are strongly reduced, textured areas and edges are not.

Two separate functions control grain reduction:

- **Threshold:** Refers to the amount of pixel variation in the surrounding area below which the effect is considered grain, and above which it is considered texture or edges. The higher the threshold, the larger the differences that are considered grain.

- **Value:** Determines the amount of sharpness reduction performed on the area that is considered grain. The sharpness is relative to the rest of the picture.
0 – No reduction
10 – Maximum reduction



How to Use Sharp Tools

The Sharp settings are affected by several factors such as enlargement, original type, and original size. Whenever one of these factors is changed, a different Sharp setting is applied automatically. The default Sharp table supplied with the scanner gives good results in most cases. However, for some originals the settings of the default Sharp table may require modification. The modified sharp setting can be saved in a new Sharp table. If you want to change the Sharp setting, we recommend the following guidelines:

General

- Always work within the **Max Detail** window when changing Sharp settings.
- Try to make the minimum number of corrections.

Intensity and Radius

- In most cases, changing the **Intensity** will give satisfactory results without using any other Sharp tools. Note that it is not recommended to use high values of **Intensity**.
- Maintain the balance between highlight and shadow **Intensity**. Set the shadow **Intensity** one value higher than the highlight **Intensity**. For example, **highlight**: 4, **shadow**: 5. The exception is for high contrast pictures with strong shadow details like a rock in sunlight.
- If, after changing the **Intensity**, the result achieved is unsatisfactory, increase the **Radius** size.
- Try a few settings until you reach satisfactory results. This will help you find the settings that best fit the originals you usually scan.

Filter

Change the **Filter** in special cases where a particular **Filter** has a definite effect. For example:

- The **Red Filter** gives skin tone a smooth appearance. Note that it can cause unwanted loss of details.
The **Red Filter** is also used as the default filter for scanning Negative originals.
- The **Red-Green Filter** gives good results in most cases, but might cause gray areas to have colored contours.
- The **Blue Filter** usually gives a high level of noise.
- **Red**, **Red-Green** and **Green** are used most often, while **Blue** and **ALL** are recommended only in special cases.

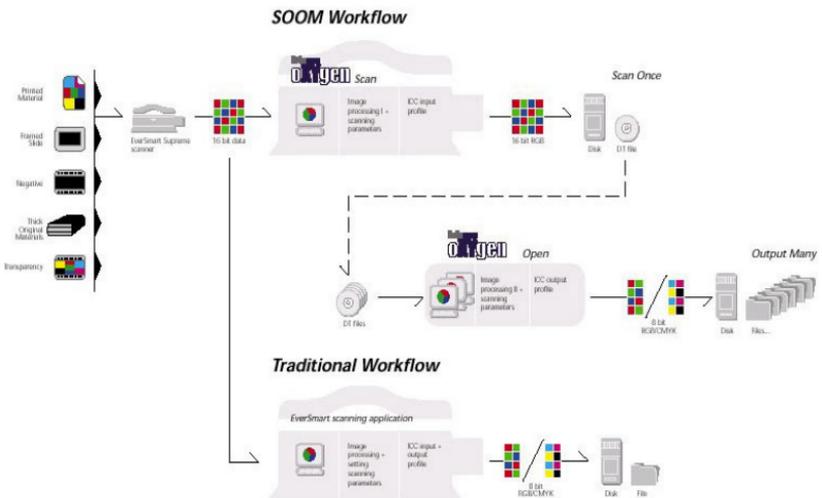
Grain Reduction

- After you set the desired level of sharpness, change the **Grain** parameters.
- Keep a balance between value and threshold. For example, do not set threshold and low suppression, or vice versa.
- Remember: Grain reduction affects sharpness, so apply these functions at the minimum setting necessary.

Digital Transparencies: Scan Once Output Many

A DT (digital transparency) is created by scanning the original image as a **16 bit RGB** file in TIFF format. The DT file contains all the data you need for later repurposing at the highest-quality output. The image's data is captured by the scanner's CCD and saved as raw data, with no modifications that might compromise its repurposing. The DT file actually becomes your original image. This new workflow is known as **SOOM – Scan Once, Output Many**.

In the traditional workflow, if an image is needed for more than one output application it must be scanned separately for each application. This is both costly and time consuming. With the **SOOM** workflow you can use a **DT** file for as many output applications as you like, anywhere, anytime.



A **DT** file can be created by CreoScitex's Premium Line scanners: EverSmart Supreme, EverSmart Select, and EverSmart Pro II, using the EverSmart oXYgen application.

The **DT** files can be opened using both the oXYgen Open or oXYgen Scan applications, with a special dongle. You can then set up parameters, edit colors, and make other modifications in the same manner as you would when scanning the analog original placed on the flatbed of the scanner.

Although output devices are today restricted to 8bit, the additional 8bits of the **DT** file enables customization of the digital original file according to the color space of the chosen output device.

When the output device is yet unknown, saving to a 16 bit **DT** file, instead of 8 bit RGB, and converting it later, results in far better quality. Also, transformations are more accurate, given that all the information is saved in the **DT** file.

For more information about **DT** files, [visit our site](#).