oXYgen Smart Tips

English

Scanning Photographic Glass Plates

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www.creo.com/scanners

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oXYgen Smart Tips

oXYgen Smart Tips are designed to help you produce the highest quality results with your Creo scanner and oXYgen Scan software. Whether you're working on a Windows® or a Macintosh® platform, oXYgen Smart Tips address specific tasks in your workflow.

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Overview of the Photographic Glass Plate

The use of photographic glass plate negatives began around 1851. The first type of photographic glass plate negative, called the *wet plate* negative, was in use from 1851 until approximately 1880. This type of negative can be identified by looking at the edge of the emulsion where its coating is often uneven. The wet plate negative was replaced in approximately 1880 by the *dry plate* negative which was characterized by a silver-gelatin emulsion applied by the manufacturer. This processed emulsion on a dry plate negative is black, even, and smooth.

A photographic glass plate negative often contains a significant amount of detail and tone values due to the quality of the emulsion. The size of a photographic glass plate negative was typically 4 x 5 in., 5 x 8 in. or 8 x 10 in., although larger sizes were not uncommon.

Images on photographic glass plates are of historical importance and yet suffer from decay as do other analog images. Even the best storage methods cannot prevent them from fading and shifting in hue. Improper storage and exposure to ultra-violet light expedites this degradation process. Since any handling of an analog collection can do damage to the originals, digital archiving of analog content is a crucial role for museums, libraries, and others concerned with historical image preservation.

Benefits of a Creo Scanner for Archiving Photographic Glass Plates

Since photographic glass plates are often larger than 4 x 5 in., collections are often archived using a Creo high-resolution scanner that uses XY stitching technology. With XY stitching technology, originals are scanned at with superior image depth of 16-bits per color, at high-resolution regardless of their size. With consistently high optical resolution of up to 5,600 dpi, a Creo high-resolution scanner is ideal for digitally archiving originals on film, print or photographic glass plates. The Creo DT (digital transparency) workflow provides a premium solution for digitizing image archives with future repurposing in mind.

Recognizing Types of Photographic Glass Plates

There are three types of photographic glass plates:

- Single-glass: Emulsion is on one side only. Most photographic glass plates are of this type.
- Double-glass: Emulsion is between two glass plates. In this case, it is not important which side you scan. This is a rarer form of photographic glass plate.
- Mounted: The photographic glass plate is mounted in a metal or cardboard frame, similar to how a 35 mm transparency is mounted.

Digital Archiving Procedures

This document provides you with some basic procedures that will assist you in optimizing the digital capture of your photographic glass plate originals.

Locating the Emulsion Side

For quality scanning, it is essential that you locate the side of the photographic glass plate that is coated with emulsion that contains the actual image.

With a single-glass photographic glass plate, as with today's transparencies and negatives, you can detect the emulsion by holding the original on a slight angle under direct light. The emulsion side is dull with a slightly posterized appearance. The emulsion side must be placed face-down on the scanner's base glass.

In the case of a double-glass photographic glass plate, it does not matter which side is placed face-down on the scanner bed. However, in the oXYgen software, you may need to select **Mirror** to ensure that the image is not inverted. For more information, see the *oXYgen Scanning Application User Guide* and *oXYgen Scanning Application User Guide Addendum*.

Cleaning a Photographic Glass Plate

WARNING: Do not use a glass cleanser that contains ammonia. With repeated use, such a cleanser can affect the scanner's anti-Newton ring coating. Alcohol is acceptable in the glass cleanser. Always check the contents of the glass cleanser before using it on the photographic glass plate or on the scanner glass.

1. Make sure you have the proper supplies and materials available for cleaning.
2. Locate the emulsion side in the case of a single-glass original.
3. Using a cloth dampened with glass cleaner, gently wipe the non-emulsion or non-coated side of the glass.

WARNING: Do not wipe the emulsion side or you could damage the original. Lint and dust can be gently removed from the emulsion side using a soft brush.

Only blow air on the emulsion side if you have determined that the emulsion is stable. If you use compressed air, make sure that you release some air from the dispenser before you use the dispenser on the original.

Do not use compressed air directly on the scanner base glass. It could push dust and lint particles into the scanner body and onto the optics.

Tip: To turn over a photographic glass plate, use two lint-free wipes.

Mounting a Photographic Glass Plate

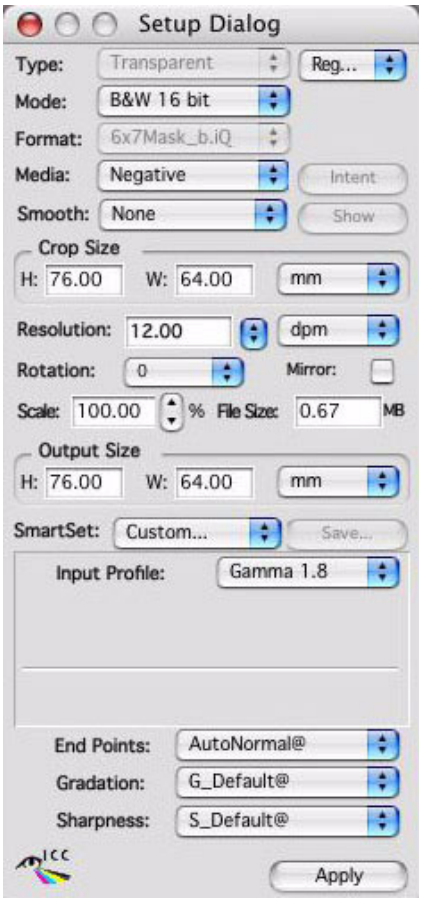
Important: Follow the guidelines in this section to prevent damage to the original and ensure a quality scan.

- For scanning on a Creo scanner, the maximum thickness of a photographic glass plate is 5 mm (slightly less than a quarter of an inch).
- To protect a delicate original from scratches, place a sheet of oil-mounting mylar between the scanner base glass and the original, making sure you do not cover the butting target-area.
- Wear lint-free cloth gloves to prevent fingerprints and other residue from contaminating the originals.
- Always use spacers before closing the top cover of the scanner. Spacers prevent the tension glass in the top cover from compressing and possibly damaging the original.

Tip: For easy-to-use spacers, cut open the scanning area of a user-defined mask, leaving only the borders. Place an adhesive bumper on each corner of the mask. You can use a standard rubber footing from an electronics store for this purpose.

Setting Scanning Parameters

Before you begin to scan using the oXYgen software, set parameters in the Setup dialog box that are best suited to the photographic glass plate original.



Mode

There are three scanning mode options: DT, **B/W 16-bit**, **RGB 16-bit**

- **DT**: Creo's unique DT (digital transparency) workflow takes into consideration future repurposing for high-quality output. A Creo scanner captures an analog image and then saves the raw, unmodified, digital data in a standard TIFF file that includes the scanner profile. This DT digital master (that does not include sharpening) serves as a substitute for the original, analog image. The advantage of using the Raw DT workflow is the ease-of-use at the scanning stage since no image manipulation, namely toning and sharpening, is required. A scanner operator of any level of expertise can use this workflow. You can open a DT file with oXYgen Open software and retouch it with Adobe® Photoshop® software

(a plug-in is supplied with oXYgen software). For more information, see *oXYgen Smart Tips: Viewing and Retouching DT Files* at http://www.creo.com/global/products/scanning_systems/smart_tip_DT.htm.

- **B/W 16-bit**: Recommended for scanning black-and-white, negative photographic glass plates.
- **RGB 16-bit**: Recommended if you prefer to scan a black-and-white original as an RGB 16-bit file. If you select this mode, make sure the default **B/W** film type is selected.

For detailed workflows, see *oXYgen Smart Tips: Digital Archiving with Creo Scanners* at http://www.creo.com/global/products/scanning_systems/oXYgen_Smart_Tips.htm.

Regular / Frame

- For a single-glass original, in the upper right section of the Setup dialog box, select **Regular**.
- For a double-glass or mounted original, in the Setup dialog box, change **Regular** to **Frame**. Frame performs auto focusing on the original to achieve maximum optical sharpness.

Optical Resolution and File Size

Maximum optical resolution with the EverSmart® Supreme scanner is 5600 dpi which captures all the image quality and details of the original. In fact, in most cases, there is no need to use an optical resolution greater than 2000 dpi. Optical resolution and file size are directly related. Consider the storage capacity available to you as well as your future reproduction needs before deciding on which optical resolution to use.

Sharpness

Do not apply sharpness. In most cases, there is not need to use a sharpness table when scanning a photographic glass plate.

Input Profile

From the **Input Profile** list, select the gamma input profile that best suits your needs. This profile is attached to the scanned image and affects image display on a monitor but not the image data in the file. When you open a scanned image in Adobe Photoshop software, it should appear the same as it does in Preview in oXYgen software.

- **Gamma 1.8:** Enables viewing on a Macintosh system.
- **Gamma 2.2:** Enables viewing on a Windows system.

Using a Naming Convention

Use the **Automatic Naming Setup** option in oXygen software to assign a prefix, suffix, and indexed numbering to the image files in a collection.

1. From the oXYgen menu, select **Setup>Automatic Naming Setup**.
2. To include a prefix:
   a. In the Automatic Naming Setup dialog box, click the top button.
   b. Click the **Prefix** check box.
   c. Enter a prefix.

Note: If you select **Default**, SCAN is automatically used as the prefix and 1 as the first number for indexing.

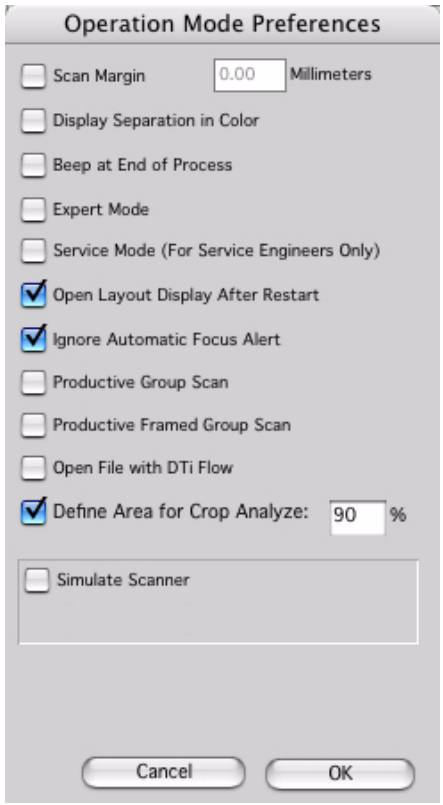
3. To include a suffix:
   a. Click the top button in the dialog box.
   b. Click the **Suffix** check box.
   c. Enter a suffix. The suffix appears after the indexing numbers in the filename (for example, if red is the suffix, then the filename might be house_1_red).
4. To set the first index number for a series of image, select the **Automatic Image Indexing** check box and then enter a number. Other images in the series are automatically numbered sequentially according to this first number (for example, SCAN_1, SCAN_2, and so on).

5. If you want the file format suffix (such as JPEG or TIFF) to appear as part of the filename, click the **File Format Suffix** check box. This is useful if you are intending to use the files on a Windows system.

Crop and Image Analysis

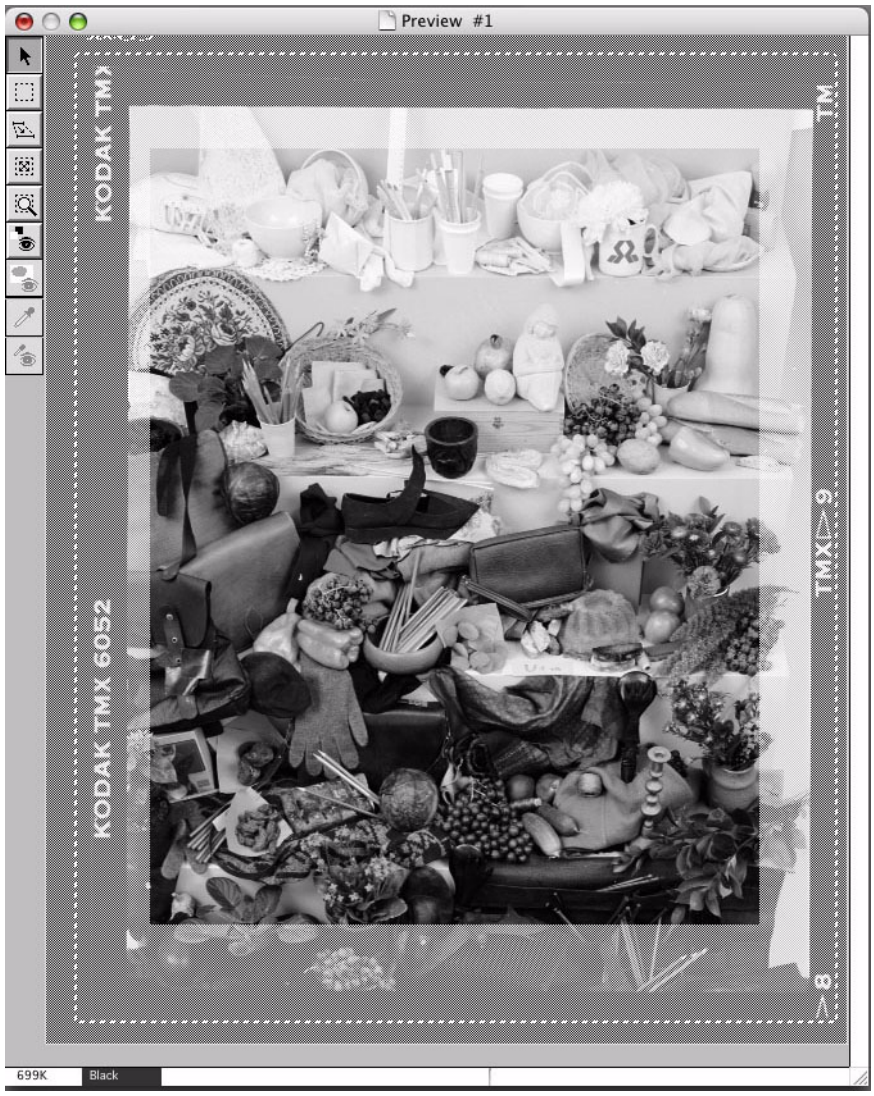
As an archivist, it is will want to capture the entire image as it is displayed in the Preview as well as its crop. However, since the original may not have square edges or regular sides, the tonal range of the entire image and the crop may be analyzed differently. To prevent inaccurate analysis of the image and inconsistent tonal range in the scanned files, use the following procedure:

1. In the oXYgen menu, select **Setup>Operations Modes**.



2. In the Operation Mode Preferences dialog box that opens, select **Define Area for Crop Analyze** check box and then enter a value within the range 40-100%. This value represents the crop area used for image analysis as a percentage of the entire crop. You can specify that only part of the crop is used for the crop analysis. If you do not use this option to define a crop area, the default for the crop analysis is 90%.

In Preview, you can view the area that is included in the image analysis.



To redefine the crop analysis area in Preview:

1. On the keyboard, press SHIFT to view the area included in the image analysis.
2. If required, use the arrow keys to manually adjust the area.

Scanning

After you have set all relevant parameters and you are satisfied with the results in Preview, you are ready to scan the original.

➢ On the **Scan** palette, click the **Scan** icon to open the Scan dialog box.