



Cézanne

A new way of looking at scanning



Scanners. Every one in the printing business has one, or wants one, or wants a better one. Scanners are arguably the most crucial element in the printing workflow. Unfortunately, with the variety of options in the ranks of scanners, selecting the right one isn't always easy. What most people want in a scanner is quite simple: convenience, productivity, and quality. Why is it that the simplest things always seem the hardest to attain?

Things are not always as they seem. Dainippon Screen has recently developed an innovative new scanner called the Cézanne that makes everything easy. Named after the great painter, Paul Cézanne, the Cézanne scanner is as bold and brilliant as its namesake.

Ingenious and Innovative

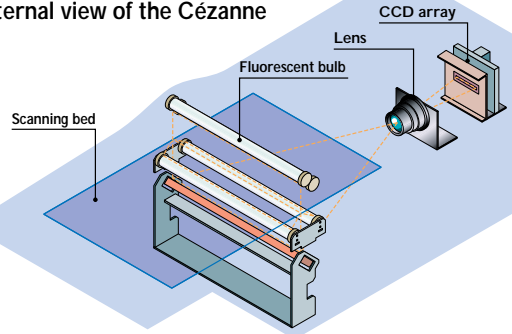
A world of color

Often referred to as the father of modern art, Paul Cézanne spent his life perfecting new ideas and techniques in painting. Echoes of his work are apparent in art to this day, and some of his ideas are even reflected in the way we deal with color in the graphic arts industry.

Color is the basis of all form. As Paul Cézanne said, "Drawing and colors are not separate and distinct, as everything in nature has color. While one paints, one draws; the more the color harmonizes, the more precise becomes the drawing." What this means to scanner users is that the better the color capture the more accurate the image.

Screen has brought the art of form through color to its height in its many scanners, and the Cézanne is no exception. What's more, the Cézanne is based on an innovative design that combines the best of flatbed and drum scanning in a single unit. Let's take a look at what makes this unique scanner tick.

A three-dimensional internal view of the Cézanne



What's that projection, anyway?

The Cézanne certainly presents a striking first impression. "What," many of you may find yourselves asking, "is that projection at the left side of the machine?" Actually, that innocuous-looking projection is the secret to the Cézanne's productivity and quality.

Go ahead, scan an original. Notice how the scanning bed, rather than the optical system, moves. Now do you see what that projection is for? "That's all very well," you may say, "but why have a projection sticking out at all? Wouldn't it work just as well keeping the scanning bed stationary?"

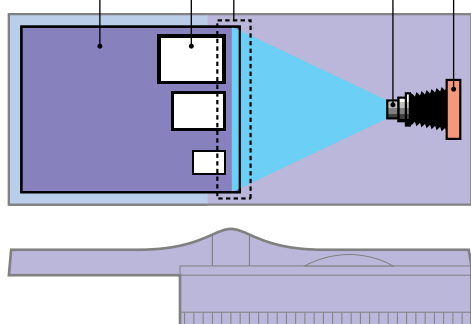
Actually, it wouldn't. Moving the scanning bed is one of the secrets to the Cézanne scanner's advanced functionality. It allows the Cézanne to scan originals at high-resolution anywhere on the scanning bed, helps assure consistently high quality, and increases productivity.

To understand why moving the scanning bed is so crucial, it's best to start by looking at scanners that keep the scanning bed in a fixed position. Since fixed-bed scanners must move the light source, the mirror, or even the CCD array during scanning, the number of moving parts is very high. Space is also limited, making it difficult to include a zoom mechanism. In scanners with no zoom mechanism, all originals must be scanned at the same resolution regardless of their final destination. This often means originals can only be scanned in multiple passes. What's more, with so many bulky, unwieldy moving parts, it is difficult to maintain smooth motion during scanning.

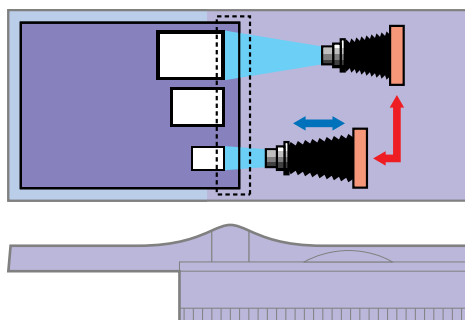
The Cézanne makes the entire scanning process simpler. For one thing, it moves the scanning bed rather than the light source, CCD array, or mirror. It is much easier to balance and move a scanning bed with precision than to do the same with optical assembly components.



Scanning bed Original Light source Lens CCD array



During low resolution scans and prescan, the Cézanne reads the entire scanning bed in one pass.



The Cézanne's advanced X,Y zoom mechanism also allows it to scan originals anywhere on the scanning bed at the optimal resolution for the size and enlargement desired.

The Cézanne's CCD array unit does move, but it does so only between scans, so even if deviations arise in the motion, they have no effect on scan quality.

Moving the scanning bed rather than the optical assembly components also makes it easier to include a zoom mechanism. The Cézanne's high-quality zoom mechanism allows it to scan originals at a wide variety of resolutions. This eliminates the need to scan at higher resolutions than desired, and increases productivity dramatically by making it possible to scan most originals at their optimal resolution in a single pass.

Moving the scanning bed is not the only secret to the Cézanne's superior quality and productivity, though. In order to assure that the Cézanne can scan at any resolution throughout the scanning bed, the CCD array unit is designed to move in more than one direction. In fact, the CCD array unit can move both in the X and Y directions as required to achieve any position necessary for scanning. Best of all, the CCD array unit can move in the X and Y directions simultaneously while altering zoom magnification, so changing resolutions and scan positions between images is quick and efficient.

Thanks to the Cézanne's X, Y zoom technology, there are also no problems with the light coming from strange angles and causing problematic artifacts on the scan. The light always comes at the CCD array unit from the optimal direction. All this helps the Cézanne's top-of-the-line tri-linear 24,000 CCD element array capture superior image quality at all times.

And that's not all

Another advantage of the Cézanne's unique construction is the fact that the scanning bed is removable. With a scanner in which the

optical assembly, rather than the scanning bed, moves, light must strike the original directly from the optical assembly. That means the space between the scanning bed and optical assembly must be empty. If the scanning bed on such scanners were removed, damaging dust and moisture would be able to reach the optical assembly.

With the Cézanne, however, the CCD array unit is kept safely under cover and light is projected to it from the light source using a mirror during scanning. This means the scanning bed, or tray, can be removed without any danger to the CCD array unit. Since the scanning bed moves, however, that must be protected as well, and hence the Cézanne's side projection.

Neither does moving the scanning bed reduce any of the Cézanne's abilities. The Cézanne offers an impressive range of optical resolutions, from 589 to 5,300 dpi, and can go as low as 20 dpi and as high as 12,000 dpi with interpolation. What's more, the Cézanne can scan originals up to 340 x 530 mm (13.4" x 20.8"), regardless of the type of original. And not only can the Cézanne handle everything from transparencies and reflection originals to negatives and line art, it can even scan thick originals such as books.

The most productive scanner in the West

The Cézanne is armed not only with high scanning resolution, but also with several features that add to productivity. For example, the Cézanne offers optional original holders that make mounting originals a snap. What's more, the scanning tray can be removed and replaced with optional additional trays, so the operator can mount originals onto one of the extra trays offline while another tray is being scanned. All of this increases productivity, especially when paired with

the Cézanne's high scanning speed (36 scans of 35 mm originals at 350 dpi and 400% magnification, or 35 scans of 6 x 7 cm originals at 300 dpi and 200% magnification, in one hour, including time for conversion from RGB to CMYK).

Another feature that increases productivity is the Cézanne's remarkable image processing software: ColorScope Pro 3. This software includes all the image processing options featured in its predecessor, Screen's popular ColorScope Pro, as well as an advanced Intelligent Setup function that combines the best of AI setup with the intuition of the operator.

The Intelligent Setup function allows the operator to select the appropriate setup values for an original with the aid of intuitive keywords describing the subject of the image, such as "Jewels", "Chinaware", or "Foods". The operator can even select from a variety of finish styles such as "Slightly dark" or "Soft". Of course, experienced operators can adjust the Intelligent Setup's highlight, shadow, USM, and color correction values manually as well, if desired.

ColorScope Pro 3 also features an auto-learning function that records any fine-tuning the operator makes to the Intelligent Setup settings. The recorded fine-tuned settings can be applied to the default settings if desired, eliminating the need for the operator to make the same settings time and time again. This helps ColorScope Pro 3 grow and change over time.

Pre-scanning is fast and operation is intuitive enough for even the most inexperienced of operators. All the operator needs to do is mount the originals, select the area for scanning from the pre-scan screen, pick the keyword for the original, and press start. ColorScope Pro 3 handles everything else. Batch scanning is available, of course, and output can be in RGB (48 bits), CMYK (32 bits), or grayscale (8 bits). And since ColorScope Pro 3 features client/server architecture, the operator can even set up scans in the foreground while scanning takes place in the background.

Another advantage of ColorScope Pro 3 is soft proofing. The software comes bundled with Screen's Fit 2.0 program, which enables users to build ICC profiles for output devices and computer screens so the operator can see what a scan will look like before output. ColorScope Pro 3 even offers a preview function that approximates the effects of selected scan settings on the image in advance.

What's in a name?

Cézanne was fascinated with the idea of expressing the images in nature through the effective use of color. Thanks to his genius and perseverance, he was able to make breakthroughs that freed the next generation of painters to explore their creativity to the fullest. His efforts were crucial in creating the bold, modern world of art that we enjoy today.

History does repeat itself. Dainippon Screen's Cézanne scanner has the potential to become the inspiration for an exciting new generation of scanners. And there's no doubt that this innovative and ingenious device will wield its beneficial influence on a whole world of users in years to come.


Cézanne would be proud.

Artificial intelligence that's truly intelligent


The Cézanne scanner's ColorScope Pro 3 image processing software features a truly intelligent setup function known, appropriately enough, as Intelligent Setup. Unlike standard AI setup functions, Intelligent Setup incorporates great flexibility and intuitive operation. With Intelligent Setup, it's easy to get the effect you want in a scan without complicated combinations of settings.

Changing the appearance of an image involves nothing more than adjusting the appropriate setup bar. There is no need to alter tone curves or make individual settings for each separation. Intelligent Setup makes getting the desired effect easy and fast.



 At the standard setting, the model's skin appears as it was in the photograph, neither remarkably rosy nor noticeably pale.



 Simply by pulling the marker to the right, the operator can increase the rosiness of the woman's skin, creating a more vibrant and attractive image.