

Roland SolJet Pro II

Evaluation of an Eco-Solvent Ink Print

Site-Visit Case Study #1





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Caption for front cover photograph: Roland SolJet II SC 540 print

Introduction

The only way to really know whether a particular printer functions as advertised is to ask a sign shop that owns that printer. All printer manufacturers and some resellers maintain Success Stories which tout the benefits of the printer. But this kind of print shop is usually a part of the PR program of the manufacturer; usually the printer has been given free to the print shop in exchange for the Success Story.

It is curious why these Success Stories never tell you what does not function, what colors the printer can't achieve.

So FLAAR drops in unannounced. We do not ask the manufacturer to recommend their pet places. Indeed we have no relationship to Roland whatsoever.

While in St Louis recently on other FLAAR business, I looked up some sign shops in the phone book that were situated near where I was staying in Ladue, where my mother and brother live. By coincidence both sign shops had a Roland SolJet. I had just inspected a SolJet in Thessaloniki, Greece the month before, en route to Athens for the Olympics. I was at the Olympics related to Kodak cameras and printers.

A lot of people buy Roland printers because their dealers recommend them. These sign shops often do not know the pros and cons of what they are buying, nor is there a realistic way to learn about the pros and cons of the Mimaki, Mutoh, and other solvent ink printers. So as a public service FLAAR does site-visit case studies and publishes the results.

We use a standardized format so that all printers are treated equally. The format consists of a list of questions. Since each print shop is different, sometimes we get so involved in discussing one aspect that we don't get at other aspects. Since the print shop personnel are busy, it is not always realistic to ask three hours worth of questions. So we tend to ask whatever is practical during two hours.

The questions are generally in italics. The answers are distinguished between the sign shop owner, operator, and the editor (FLAAR). Questions that pertain to the specs of the printer are more easily answered by the editor. These are primarily to remind the reader what kind of printer is under discussion.

In order to distinguish who is providing the answer or commentary, "Editor" means the editor has provided the information.



This mural sized print is an enlargement from a 35mm digital camera. The quality speaks highly of the camera, the printer, and the photographer.

Inspection, Interview, and Documentation

Brand name, model

Roland SolJet Pro II, SC-540

Year purchased

In 2002 bought the model 500. A week later the model 540 came out. I felt I should have been told; surely they knew the new model was coming out. So they traded it for a model 540.

Why this brand and model and not another one? What other printers were under consideration at the same time? Why did you not buy the other one?

“Print and cut aspect is crucial. However having a separate cutter can have other advantages. If you are printing a long print run, this ties up your printer, so in such a case it would help to have a separate cutter.

We looked at Durachrome but the technology and the appearance were unusual so we decided not to buy it.

Editor: both the companies in St Louis that we interviewed bought their Rolands from Schiller’s Imaging Group, a company known locally as an offshoot of Schiller’s Camera & Video. In the Yellow Pages this is the only company listed as selling inkjet printers in the St Louis area, so naturally they get lots of business. Since they are a Roland dealer, they sell lots of Roland printers.

This is an example how a local dealer situation influences the market share of an inkjet printer brand. Surely in a city as large as St Louis there would be an Encad dealer, and possibly a place that sells Mutoh and Mimaki, but they are well hidden from anyone looking in the Yellow Pages.

As an aside, we visited on other printer in St Louis; they had asked a Mutoh dealer somewhere in the area for a sample, and the samples were so bad they bought a Roland instead. We hear the same tragedy elsewhere: local dealers don’t bother to do a professional job when a prospective buyer sends their own file asking for a test print.



When was this model first introduced?

We estimate that the original SolJet may have been introduced about 2002.

What is profile of the print shop in which this printer is now installed?

A young relatively new sign shop that does primarily vinyl cutting and traditional sign making with a Gerber Edge. They also have a laminator.

What other printers do they have?

The Roland SolJet is the only wide format inkjet printer this print shop has at the present time.

What types of clients do they serve?

Lots of decals and vehicle wrap in addition to a wide variety of traditional signs of all sizes and shapes.

What printers did they have previously?

Their first printer was an Arizona 180. But it required far too much maintenance.

Size, shape, technology, mechanical

Is this printer made originally as a solvent ink printer, or is it retrofitted with solvent ink? If retrofitted, what was the original brand?

Editor: most solvent ink printers are retrofitted. The Roland, and its Epson printheads, were never designed to handle any kind of solvent ink. You can tell this by the way the heaters were tacked on one by one. You are reminded of the retrofitted aspect when, in addition to all the upgrades bolted on the top, sides, and undercarriage, that you then have to buy still another stand-alone heater to finish off the system.

Specifications: Printhead

What printheads are used? Xaar, Spectra, Epson, or other? Explain

the pros and cons of Epson, Spectra, or Xaar heads relative to their ability to handle solvent inks.

Editor: The Roland SolJet uses Epson heads, the same heads that are in an Agfa, Mimaki, Mutoh and comparable brands. These Epson piezo heads were not made for using with solvent inks. Xaar and Spectra heads are made to hold up to the solvents, however Xaar heads have a record of not holding up well. A Spectra head costs between \$4,000 and \$6,000, per head, which is the reason they are not used in an entry-level solvent ink printer. In comparison an Epson printhead costs about \$500.

Is the brand and model of printhead identified in the specifications?

Editor: manufacturers and most dealers do not identify the printhead unless a client really wants to know. But it is not the identification that is crucial, it is the fact that some printheads were never originally designed to handle certain solvents.

What accessories are extra cost? Are these same or similar accessories included with other printers at no extra cost?

Editor: The first SolJet was premature, and does not seem to have been well thought out or adequately tested. The inks did not work on enough uncoated media to satisfy end users. Mutoh had the same problem with their first lite solvent printer. Mimaki withdrew their JV2 lite solvent printer before units were placed on sale because the then head of Mimaki USA realized it would be a public relations disaster to sell a printer that would, for sure, not satisfy their customers. But Roland and Mutoh went ahead, and their first generation lite solvent printers were greeted with considerable discontent. It is notable that both companies escaped relatively unscathed.

The dissatisfaction with the first attempt at a lite-solvent printer caused the designers to hurriedly create an add-on heater that was sold as an upgrade kit for \$4,000. But it turned out that even this accessory was not enough, and many purchasers of SolJet printers had to go out and buy still another heater to stick on the front or back of the printer.

ColorSpan, Gandinnovations and companies that made true solvent ink printers tended to build these heaters into the original construction from the ground up. But these true solvent ink printers cost about \$50,000. The retrofitted Roland printers cost \$30K or a bit less, so buyers seemingly put up with a lot of simplicity, under the premise that you only get what you pay for.



Construction (Build Quality)

What about solid-ness of construction of the printer?

“We have no maintenance issues compared with the Arizona 180. The magenta head of the Arizona 180 clogged every weekend. We even tried saran wrap and other means to cap the heads. But the magenta head still clogged and we had to clean the system every Monday morning.”

What about heater or dryer? Is there a pre-heater and post-heater both, or just one? How many heaters does this printer have?

The first attempt by Roland to handle solvent inks did not have enough heaters. So an upgrade kit included an additional heater to be installed to handle the eco-solvent inks.

Editor: But even with the heaters that Roland sells, most users have had to buy still another heater. They usually buy from Black Body Industries, Fenton, MO.

Inks

How many colors?

This Roland is a 6-color system, CMYK + light magenta + light cyan. There are two sets of inks for a total of 12 ink lines.

Editor: In the Mimaki JV4 you can run two different kinds of ink and switch back and forth easily. Switching back and forth is not either automatic or easy with a Roland.

Does ink come in cartridges or bulk?

Ink comes in 220 milliliter cartridges.

Editor: bulk ink is readily available for the Mimaki JV3 but not for the Roland.

Which color of ink is used up the quickest?

Magenta and then yellow ink are used the fastest.

Is there any ink color or kind which gives a problem that you don't get with the other color inks?

“Rich blues are tough to achieve with a Roland SolJet.”
Yes, can achieve a Budweiser Red. Yellow on the Roland is better than yellow on the Arizona 180; the yellow on the Arizona was muddy, too orange.



Editor: now you know why Roland advertising stresses how well it does with blues (and reds). Several printers use advertising to claim they do fabulously with precisely those aspects they fail at or do poorly at. Of course in the long run this kind of misleading advertising is counterproductive, because if people find out, they feel mistrust at other advertising claims too.

Is this a lite-solvent or eco-solvent?? What is the chemical composition of the ink?

The ink does have a smell, just not as strong as true solvent. The eco-solvent also did cause headaches for some of the staff.

Editor: the ink is called eco-solvent but in reality it is not ecologically benign. We wrote Roland to ask for the MSDS but so far they have not responded. Mutoh responded quickly. We will check with Roland again; a company is required by federal law to make MSDS information available.

What kind of ink is this? Compare it with the ink for a Vutek, what are similarities and differences?

The original “Sol Ink” required coated media, which was more expensive than uncoated substrates. Then a new ink was offered. This required a \$4,000 upgrade to add an additional heater.

Editor: it appears that people who bought this printer were beta testers, at their own expense.

What about banding? What causes the banding?

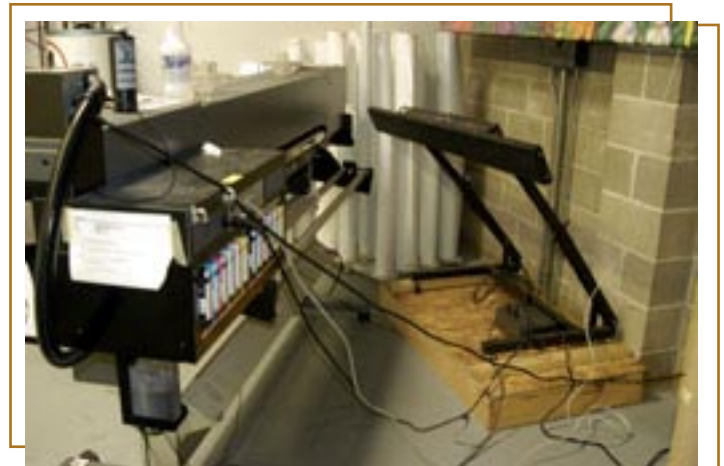
Banding depends on the media.

But there were other types of systematic printing defect patterns: Roland cast vinyl (since discontinued) had a crosshatch pattern so ink did not print well in the center of the pattern. So if you tried to print a solid area you got white spots where the centers of the crosshatch pattern were.

3M media works better; its material has a diamond pattern.

What cleaning maintenance is required?

The printer runs its own auto cleaning cycle. Once a week I maybe swab the cleaning station. The printer is almost maintenance free.



The extra printer from Black Body Industries reveals that the way the SolJet is equipped is not yet adequate to handle even eco-solvent inks.

Media

Precisely how many kinds and types of substrates will work in this printer? And rate them by “work perfectly” through a continuum to “function but not flawlessly.”

Canvas is real nice. We print wallpaper too. We print murals up to 100 feet long, in 10-foot sections. We use Intelicoat wallpaper material.

Is printhead height adjustment available? Manual? Automatic? How much?

Roland SolJet has three positions, since you have to heat the media the media sometimes buckles.

Is heating required?

Heating supposedly allows to print better. But adhesion is still an issue. On one substrate we placed transfer tape on the image to transfer it, and the transfer tape pulled off the ink.

Can the media feed without skew?

The printer does well with media feed. We have run entire rolls without problems. Where skew is a problem is on the take-up reel.



Do you get roller marks on some media? Which media? How bad are the marks?

Only get roller marks if media is left in the printer overnight, where the rollers have pressed on the media overnight. So this is only at the start of the sheet.

Is backlit saturated enough with one print, or do you have to print two and mount them together?

Yes, backlit is okay, but a bit weak. People don't notice it is weak until you put the Roland print next to a better one. But if you don't do this, clients don't complain.

Editor: piezo printers in general don't do as well on backlit as thermal printers.

Is 3M warranty available? Is Avery warranty available? What are the full added costs in ink, media, and lamination for such a warranty?

Don't use any warranty. Just started with 3M, but they would not honor their other warranty. They claimed their media was perfect as if any problem was a problem of the user. So we are not happy with 3M warranty. Avery was better in standing behind their products. But we have heard that Roland is rejecting whole pallet loads of media from Avery.

RIP, driver, color management

Is a RIP included?

The first RIP that came with Roland printers was from Scanvec-Amiable. It was not a very popular RIP because it was lite.

Then for a short period a new RIP was selected by Roland. This was rated as a much better RIP. But there was a lawsuit from another RIP company so this better new RIP was not allowed to be sold in the US.

Editor: Then Roland offered a lite version of Wasatch. This was somewhat more popular than Scanvec-Amiable, but both sign shops in St Louis said they preferred ErgoSoft. So they have abandoned the free lite RIP that Roland provides (lite Wasatch) and have paid extra for PosterPrint from ErgoSoft, which they prefer.

The Next Printer

What is the next printer that you feel you need? What kinds of jobs do you need this printer to handle? What kind of inks and substrates do you need this printer to handle?

We are looking for a printer to do the sides of box trucks, the kind where the material is not stuck to the sides, but is attached with a sliding system along the edges. Can we tile and weld sections to complete the full size of a truck side job with a smaller printer, or do we need a printer the full width that the truck requires?

Summary

Pros

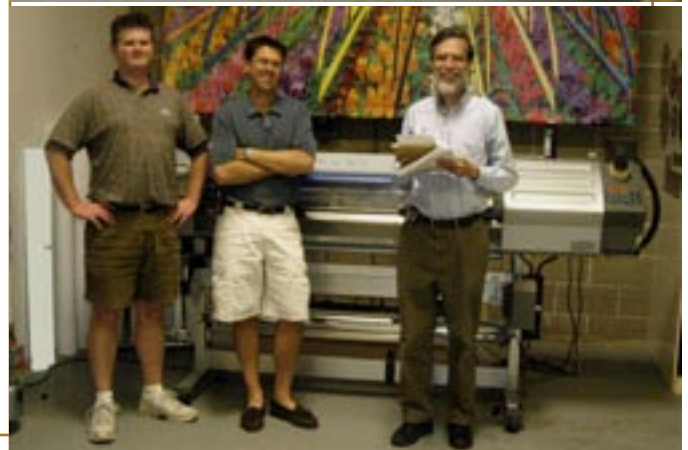
- No one gripes about cheap plastic parts or being shortchanged on the overall construction of the Roland printer.
- Can achieve seemingly more reds than earlier Rolands, which were infamous for inability to print fire engine red, sunset red, etc. But a lot of this depends on which RIP you use. Roland used to use a lite version of Scanvec-Amiable RIP, and now offers Wasatch. But Schiller's in St Louis prefers to sell Ergo-Soft, a Swiss RIP.
- If your local Roland dealer is good, this helps a lot.
- Most end-users say the printer is practically maintenance free.

Cons

- You have to buy another heater on top of the \$4000 upgrade heater.
- You have to pay for another RIP since most Roland users find they need more than the lite RIP that comes with the printer.
- Certain rich blues can't be achieved.

Other users of the same or comparable Roland SolJet printers have reported

- Printhead failure (a very expensive repair, up to \$2000).
- The user we interviewed in Greece had feeding and skew issues with the media.
- Another print shop in St Louis also said the take-up reel was not reliable. You had to be on hand to manually redirect the media when it began to wind out of alignment.



Owners and Nicholas Hellmuth are content after a site-visit case study by FLAAR. Information on the printer was provided by Jeff Burns (center)

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