

HELPFUL HINTS ON FOUNTAIN SOLUTION CONTROL

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Proper monitoring and controlling of both the pH and conductivity of your fountain solution can help you avoid a host of problems before they become costly re-makes and downtime. This article explains why and gives you some simple tips to keep your press running smoothly job-after-job.

Why measure pH and conductivity?

The composition of fountain solution used to be quite simple. Most simply contained acid, alcohol and gum arabic. Control was easy. Press operators mixed a given amount of each and ran the press without trouble.

Times have changed! Modern solutions contain all sorts of high-tech additives such as wetting agents, alcohol-replacements and buffering compounds to address environmental and cost concerns. The increasing use of alkaline papers causes more trouble because the calcium carbonate in the paper neutralizes the acid and builds up on rollers and blankets.

Failure to accurately monitor fountain solution can cause a host of problems, including scumming, tinting/toning, slow drying of ink, chalking, roller stripping, setoff and premature wearing of plates, to name a few.

What is pH all about?

pH is used to indicate and control the acidity. Readings above 7.0 are "alkaline", 7.0 is "neutral", and readings below 7.0 are "acid". A reading of about 3.5 to 5.0 is common, but check with the manufacturer of your solution to be sure.

What is conductivity?

Conductivity is used to indicate the amount of total dissolved solids (TDS) in the solution, and is a control for variation in fountain solution strength. Conductivity is measured in units called "microsiemens", and abbreviated as "ms" or "mmhos" and is important, because it will indicate mixing errors. Check

with the manufacturer of your solution for the recommended conductivity reading.

What are the benefits?

There are two very important reasons to measure conductivity as well as pH. First, the additives in fountain solution can result in normal readings of pH even though the concentration is incorrect. Second, unless you use distilled or conditioned water, which is free of TDS, your water supply may vary from day-to-day or even during the day and can give incorrect values. You should measure the conductivity of the incoming water every time you mix fresh solution, mix above this level to the recommended strength for your fountain solution, and measure again. Record this number as a benchmark.

For every press run, record the pH and conductivity readings at the start and finish, along with the kind of paper stock. For long press runs, take interim readings to keep the pH and conductivity under control and avoid problems. If any trouble does arise, take readings immediately, so you can prevent them from reoccurring in future press runs, by comparing them to your benchmark conductivity.

Conclusion

Although conductivity can only be measured with an electronic instrument, many printers use outdated, inaccurate methods for checking pH, such as litmus paper. Others don't even monitor it at all.

With the low cost of accurate and easy to use electronic instruments, it doesn't pay to risk the down time and wasted materials resulting from guessing at fountain solution strength.