



Tech Talk From

Prisco®

Tech Talk #8

RESERVOIR MAINTENANCE

A PRESSROOM PERFORMANCE MINI-SEMINAR

For high-quality web and sheetfed offset printing, a clean, well-maintained fountain solution reservoir is essential. In a previous Tech Talk, we discussed calcium and the negative effects that it can have on the printing process. There are other factors beside calcium that contribute to a dirty reservoir. In this mini-seminar, we'll discuss these factors and make maintenance recommendations; based on years of **PRINTERS' SERVICE** technical visits to customers.

What are these other factors?

Paper Paper dust, lint and fibers from the surface and interior of the paper accumulate in the reservoir because only a portion is carried on through the press by the sheets or web. Some paper components remain on the blanket as piling, but the remainder is carried back to the reservoir via the dampening system rollers. Their components can break down into ions that will conduct electricity and thus will raise conductivity. Because they are neutral, they do not necessarily affect pH per se. This is in contrast to calcium, which tends to raise pH because it is highly alkaline.

Ink Emulsified or "broken down" ink and ingredients that are "leached" out of the ink, including solvents, some varnishes and drier compounds, can build up in the reservoir over time. In extreme cases, fountain pan reservoirs take on the color of the press unit they are serving.

Wash Depending on press wash-up techniques, wash-up solvent can accumulate in the reservoir. It has the same effect there as it does on the roller train and blankets: it dissolves ink. Water miscible washes contain a surfactant that allows them to form a stable emulsion with water. This surfactant, if it builds up too much in the fountain solution, will cause the ink on the roller train to emulsify.

Spray Powder Spray powder that is present in the air can accumulate in an uncovered reservoir, contributing to the milky, discolored look that is characteristic of a poorly maintained reservoir. Pressmen should always work to use the minimum amount of spray powder required to maintain proper spacing between the printed sheets.

How can printers determine when the reservoir needs changing?

All of these factors contribute to a dirty, "tired" fountain solution that needs to be changed. Aside from the reservoir's appearance, the surest signs that it needs maintenance are changes in and around the press. These include:

- Excessive foam in the reservoir.
- Increasing water metering speeds that lead to "fat dots" and excessive dot gain.
- Slower rollups on press.
- Plate sensitivity, tinting or toning.

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Remember that the plate surface is continually re-wet with fountain solution as it passes the water form roller. Contaminants in the fountain solution get deposited in the grain of the plate, and they will gradually replace the gum that is needed for desensitization. The contaminants will also get emulsified into the ink, where they build up.

Printers should monitor and record both pH and conductivity on a regular basis. Ask your **PRINTERS' SERVICE** technical representative about our pH and conductivity measurement equipment. If pH increases more than 0.5 units, or if conductivity increases more than 1000 microsiemens, versus initial readings, consider changing the fountain solution regardless of age. Otherwise, we recommend changing once per week.

All **Prisco®** fountain concentrates contain a buffer system which is designed to counteract the tendency of both pH and conductivity to rise over time. In extreme cases, this buffer system may be consumed prematurely. Your **PRINTERS' SERVICE** technical representative can help you determine if you would benefit from a switch to a concentrate with greater buffer capacity.

Reservoir Maintenance Program

1. While the reservoir is empty, wipe it thoroughly. Use your **Prisco®** press wash solvent if necessary to remove ink residue.
2. At this time, fountain pans should be inspected and cleaned out as needed.
3. Replace all filters.
4. Periodically or as needed, the entire recirculating system should be flushed with **Prisco® Royal Flush**, which will remove all contamination.

What else can I do to maintain a clean reservoir?

Many printers simply place our **Prisco® Ink Grabbers** in the reservoir to absorb many contaminants. Installing our **PriscoTech® Aquafilters** in the return lines to the press is a mechanical means of extending fountain solution life. For many printers, the ultimate step in achieving greater fountain solution longevity is a capital investment in our **PriscoTech® AquaChill® II Filtration, Refrigeration and Recirculation System**. Its unique tri-filtration filtering process removes contaminants as small as 5 microns from used fountain solution, helping extend fountain solution life and reducing disposal fees. The unit then returns chilled, clean fountain solution back to the press to be re-used. Printers find that this system has a major positive impact on their print quality as well.

Optimize Your Performance

Our goal is to help you optimize your performance on press. Improving your reservoir maintenance is just one of the ways we can improve your printing operation. Several other topics in our Tech Talk series may be helpful to you: **Calcium and Its Effect on Printing**, and **Roller Maintenance**. Please contact your **PRINTERS' SERVICE** salesperson or technical service rep to receive copies and an in-depth consultation. Thanks for the opportunity to share our expertise with you.

10/05

As always, your local **PRINTERS' SERVICE** office is happy to answer your questions:

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