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We'll discuss the factors that can damage rubber rollers and blankets, and give you some suggestions to help you make the right choice for a cleaning product.

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We will also share some maintenance tips to keep you happy with your choice on the press!

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THE EFFECT OF SOLVENTS ON ROLLERS AND BLANKETS

During the printing process, press parts and accessories interact with a wide variety of chemical products, ranging from ink, water, fountain solutions and additives, to wash products used to clean metal or rubber rollers and blankets. It's a complex process to generate the end product of ink on paper. Printers know that their work is a delicate balance of these factors, and problems can result when that balance is disrupted.

At PRISCO, we're frequently asked about the impact of cleaning solvents on rubber rollers and blankets. Like so many other issues that printers face, it's not a simple one. Rollers and blankets are manufactured from many different kinds of natural and synthetic rubber compounds, all of which are designed to be durable and long-lasting. These compounds are often matched to a specific ink such as an oil-based or energy-curable type.

Regarding washes, there are literally hundreds of formulas of varying compositions and strengths that are available from various suppliers. PRISCO washes are formulated to meet the requirements of major press and roller manufacturers as well as industry associations. All formulations take into consideration government environmental regulations and customer safety.



FACTORS THAT AFFECT BLANKET & ROLLER LIFE



Wash products are just one of many factors that can have a negative impact on rollers and blankets. Let's review some of the other contributing factors:

Alcohol and Substitutes

Like fountain concentrates, alcohol substitutes are diluted for use, but can have a cumulative effect if proper maintenance is neglected. Alcohol is known to harden rubber rollers, especially those used in the dampening system.

Fountain Concentrates

Some fountain concentrates contain strong solvents. However, because they're diluted when used on press, they typically have a minor effect on rubber.

Inks

Some ink components, such as solvents, will affect rubber. Even though the effect is mild, it can build up over extended periods of time.

pH Levels

Strong acids or alkalis (bases) attack rubber compounds. Highly acidic or alkaline products are sometimes used on metal rollers or plates. They should not be used on rubber rollers or blankets unless they are part of a multi-step cleaning program.

Temperature

As temperatures increase in the dampening system and ink train, the effects of chemicals are enhanced. Keep operating temperatures within the appropriate ranges.

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Roller and blanket washes must offer the printer strong cleaning. This is a trade-off since the strong cleaning compounds that help remove dirt, ink, and glazes can attack rubber. Most wash formulas are a blend of strong and less aggressive solvents. PRISCO washes are formulated to meet press manufacturers' specifications and governmental regulations for health and safety.

Here are the typical compounds used in wash formulas, listed from the strongest to the mildest:

- Ketones and aldehydes, including MEK and acetone
- Aromatics, including toluene and xylene
- Glycol ethers, such as butyl cellosolve
- Fatty acid esters
- Aliphatics, including mineral spirits
- Alcohols and glycols, such as isopropanol and ethylene glycol

If you are experiencing unacceptably short rubber life on press, try a wash formula that contains more of the milder solvents and less of the stronger ones. Check the SDS information to see what level of solvent your current wash product contains. Remember that changing from stronger to milder solvents may involve a compromise in the cleaning efficiency and evaporation rate of your wash.

“My roller suppliers say that extensive testing is performed with many blanket and roller washes, and they report that these products can damage their rollers.”

The testing that many roller suppliers perform involves submerging roller material in wash formulas for an extended length of time. With an understanding of the chemical process involved, it's easy to see that significant damage can result from that kind of exposure.



Let's remember that when you clean a press, the exposure to the solvents in the wash product is typically limited to a few seconds or a few minutes—not hours. The wash process is much shorter than the exposure from the ink and fountain solution in the dampening system. Depending upon the wash you choose, a faster evaporation rate makes contact times even shorter. However, some fast-drying solvents involve other compromises and may be more aggressive. Rubber surfaces can also be damaged by the physical process of printing including nip pressures, abrasive ink pigments, fillers, and paper stock.

At PRISCO, we realize that solvents are just one component in the complex printing process. We feel it's important to recognize that optimizing the printing process means achieving a balance in factors that can sometimes oppose one another. Choosing a solvent wash that is strong enough to keep your press clean, yet is still able to maximize the life of your rubber components is just one example. Fortunately, we have the knowledge, expertise, and product line to help you make the best possible choice.

Your PRISCO sales and technical representatives can talk with you about our full line of blanket and roller washes. You may want to choose a slightly different formula based on the part of the press you are cleaning. For instance, a strong solvent like one of our MRC family might be used on your metering rollers, while a less aggressive formula might be chosen for your ink rollers.

“Now I understand more about the trade-offs with specific solvents. What's the best answer for my printing process and me?”

MAINTENANCE TIPS

Your PRISCO sales and technical representatives will work with you on specific maintenance programs using our solvent wash products. To help maximize blanket and roller life, keep the following tips in mind:

1. Use the mildest wash you can that delivers acceptable cleaning. Autowash 6000 is an excellent starting point if you are using oil-based inks. If a slightly higher flashpoint is needed, Autowash 9000 is a good choice.
2. Choose a water-miscible wash if at all possible. Mix it with about 20% water before using. Apply the mixed solution to a rag and use to clean the blankets.
3. Use rejuvenator products sparingly. Rejuvenators work by swelling the rubber and you need to give the rejuvenator time to evaporate completely from the rubber. We recommend using a rejuvenator as part of weekly maintenance after the last run of the week. Complete a standard press cleanup before applying the rejuvenator.
4. Use stripes that are as light as possible to reduce mechanical stress on the rubber.
5. Do not overpack or over-torque the blanket.
6. Try to keep the wash solvent from saturating the blanket side edges. It can get under the blanket and swell its carcass and backing. For some presses, use packing sheets that are narrower than the blanket width to avoid “wicking” solvent underneath the blankets.
7. While many deglazers are water-based, some contain strong solvents as well. If a deglazer is used, it is advisable to run rubber rollers dry after application to allow the solvent to evaporate completely before re-inking.
8. Use the correct rubber compound for the type of ink that is being used. A mismatch can reduce rubber life.

OPTIMIZE YOUR PERFORMANCE

Managing your press variables to give high-quality printing at the lowest possible cost is the greatest challenge facing printers today. At PRISCO, we will continue to expand the options that we offer to you, our valued customer. Let us help you explore those options and find ways to improve your press performance.

Your local Prisco office is happy to answer your questions:

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